

Bob Cooper's

APRIL 15 2007

SatFACTS

MONTHLY



Reporting on "The World" of satellite television in the Pacific and Asia

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This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

Editor/Publisher
Robert B. Cooper (ZL4AAA)
Office Manager
Gay V. Cooper (ZL1GG)

Reaching SatFACTS

Tel: 64-9-406-0651
Fax: 64-9-406-1083
Mail: PO Box 330
Mangonui, Far North
New Zealand
Email -Skyking@clear.net.nz
<http://www.apsattv.com>

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our 13th year!

COOP'S COMMENT

Back on February 28th I completed my last proof read of "C-Band Pioneers", a new 224 page book which is being distributed for the first time at SBE2007 in Atlanta as you read these words. I am there and joining 300 C-Band pioneers for a perhaps last-ever gathering of the people who made all that you now enjoy with satellite possible. "C-Band Remembered" consists of several dozen "personal memoirs" by such notables as Mark Long, Clyde Washburn, Mike Kohl and many more covering that once glorious period in satellite history when there were no limits, only new lands to conquer. I enjoyed collecting their individual stories and making them into a book and only regret that more of the 1970-1980 era pioneers did not participate with their own submissions. Perhaps there will be a second edition.

A pioneer, according to media mogul Ted Turner to me in a light hearted conversation 25 or so years ago, is, "Someone with arrows sticking out of their ass." Interpretation? In America, pioneering families moved west into Indian territory and the Indians responded by burning their homesteads and scalping their wives and children. And leaving corpses laying around the burning cabins with arrows stuck in their ass. Turner was a pioneer, as "C-band Remembered" clearly illustrates. Me too.

Under the world domination plan of Rupert Murdoch, "pioneering is dead" - it is no longer possible or practical to extend C or Ku band coverage beyond those magic map-drawn lines where boresight coverage exists. If the technology doesn't get you, the copyright laws will.

"C-Band Remembered" chops that theory up into tiny digestible bites - it is filled with memoir stories of people who built 13m dishes in Ecuador and 15m dishes in Korea to tap into "out of boresight coverage" from North American satellites. My 1980 era friend Mike Kohl, living in Wisconsin, will be on a Russian Aeroflot flight to far northern Siberia when you read these words. As our June issue will report, Mike has found North American C-band signals far-far beyond boresight at a gold mining camp where money is no object - they want American TV! Mike, indirectly, is responsible for the content of this issue. Another pioneer who lives not in Wisconsin but rather in Liberia (west Africa for the map illiterate) is our front cover and first feature report example of why pioneering is hardly dead.

Antennas. Nothing happens if there is no or inadequate signal transferred from the "sky" to the LNB(f). That is the job of the reflector surface plus the feed - and the quality of the LNB portion. With the gradual failure (decline) of C-Band interest world-wide, reasonably priced C-band reflectors have simply disappeared - what remains are poorly designed, structurally floppy, screen mesh antennas stamped out by second-rate shops in Southeast Asia. If the C-band antennas of size (anything larger than 2m) are "floppy" and therefore incapable of producing maximised gain/signal capture, larger Ku band antennas are about three times worse. Firms offering 3m Ku band antennas, including notable stateside suppliers, are no longer capable of providing a quality closer tolerance dish - unless you are willing to go to Andrew or SA and spend upwards of US\$7,000 per antenna. Which brings us to this month's feature report.

Bassam Nader of Monrovia, Liberia (Electro Shack, Inc., PO Box 569) is out of the same mould that saw Bob Behar, Bob Luly, Doug Dehnert and other decades-ago pioneers ranging world-wide to install dishes of size and quality where no American TV signals had ever before been received. Wisconsin's Mike Kohl connected us with Bassam - they are two of the remaining small cadre of people who know that if the antenna is big enough, and good enough, there are no borders, no boundaries, no "edge of boresight" map lines. Bassam's report proves once again that good engineering, exemplary skills, and a full dedication to 'making it work' will still bring results. There are always signals there, as our tests with a 7.2m C-band antenna at SatFACTS have reproven recently (SF#151). Go for it!



April 15, 2007

In Volume 13 ♦ Number 152

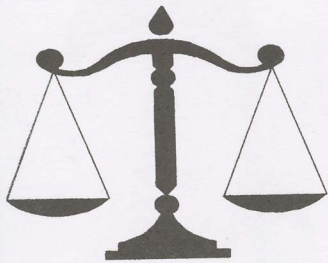
European Ku-TV 5,000km beyond boresight -p. 7; Hamilton Mobile Home Show/satellite (Bonner Martin) -p. 15; Cowboys are back -p. 20; The Mod Shop Court Decision -p. 29

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Programmer/Programming -p.2; Hardware/Equipment Update -p. 4; SatFACTS Digital Watch -p. 23; Supplemental Data -p. 26; With The Observers -p. 27

-On the cover-

Thumbs up - the signal is in! Bassam Nader, Monrovia, Liberia proves himself a pioneer.

**Just for the record**

"Regarding Freeview-UK versus the emerging freeview(tm) New Zealand. The UK terrestrial version does not have interactive capabilities; in most cases it is supplied by a stand alone STB from your nearest Asda or similar store where pricing has dropped recently to under NZ\$45! There is one option - a slot on the rear of more expensive models (not yet those for NZ\$45) allows a viewer to input funding with a prepaid card and then select conditional access options. Unfortunately of late there has been a swathe of shopping channels invading Freeview. Murdoch had originally supplied Sky News, Sky Sports News and Sky 3 but now that Murdoch is locked in mortal battle with Virgin these are likely to disappear. Still, for BBC1, 2, 3, 4 and ITV1, 2, 3, 4 and a handful of other channels, it is still the most popular game in town!"

Roger Bunny, UK

Toroidal 90 in USA

"Twenty-six years after the fact, I want to thank you for all of the assistance given to me back in 1980 as I entered the home dish business world. My original suppliers were the McCullough brothers with their Vidiark spherical antenna; I later did business with Jim Vines (Paraframe) and sourced most of my electronics from Joe Valentino of JV Electronics. The Toroidal 90 antenna featured in SatFACTS (#149, 150) is good timing; there are (commercial) applications here as well for this antenna. Once again, it is a Coop's 'Head's Up' that sends me in the right direction. I plan to be in Atlanta for the reunion; it has been a fun ride for 27 years!"

John Foley Jr., NES Communications
Shrewsbury, Massachusetts

Some American reviews of the Toroidal have been very upbeat about what it can do there. Unfortunately, the same magazines that review often ask/request/demand the product owner ALSO purchase advertising in the publication as a condition of the review. That may/might/could 'colour the content of an equipment review when the bottom financial line bleeds into the otherwise 'independent' editorial group!

**PROGRAMMER
PROGRAMMING
PROMOTION****UPDATE****APRIL 15, 2007****IMPORTANT NOTICE!**

There will be **NO** issue of SatFACTS dated **May 2007**; the next issue, dated **June 15th**, will be a dual issue combining May and June into a single cover. Your editor (and family) are attending the Atlanta SBE 2007 trade show as you read these words, will hang out in the USA to also attend the Dayton Hamfest later in May as well. Please reread the above - **there will be NO issue of SatFACTS dated May 2007.**

Old fogies gumming chicken and getting drunk. The Atlanta (Georgia) SBE2007 associated "20th C-Band Reunion" dinner gala is to be web-available (<http://www.satelliteguys.us>); their home page. The TV event runs from 7PM to 8PM Friday April 19th Atlanta time which each of you can translate to your local time (such as 11AM Saturday April 20th in New Zealand). This is a three-camera plus support archived video shoot/production and by some unexplained rationale, it will be in HD (high definition - ponder that anyway it suits you). Yes, if someone out there could record it on a DVD your editor would be proud to have a copy after returning to NZ in late May.

Terrestrial HD? It is not a dead issue - there are actually serious investigations on-going (TVNZ and CanWest) but at this point in time only as might be possible using the terrestrial (DVB-T) transmitters when they go into operation sometime during 2008. Here's the big question: 720P or 1080i??? When higher definition TV was first sketched on paper, they began with either USA 525/480 (active lines) or PAL 625/576 lines and scaled upwards. With each increase in lines the bandwidth demand goes up - more lines = more pixels (points of light/information) requiring a wider 'RF roadway'. Some world regions have settled on 720 lines sticking a 'P' on the number - that means the images are created from top line to bottom line (#001 through # 720) in sequence; "progressively." Others have gone to 1080 lines adding a "i" for interlaced (that is where the scan begins with line 1, goes to 3, then 5 and so on to 1079, returning to the top and restarting with line 2, then 4 and so on through 1080). All TV to date has relied upon "i" while all computers use the "P" technique. There are arguments on both sides, none worthy of repeating here. Now - TV3 is (today) leaning towards 720P and would like to roll out HD TV the day that DVB-T launches. TVNZ seems less certain which, if either, they approve. 1080i requires higher quality 'original material' because when compared to 625 or even 720, there is no contest (a UK BBC study disagrees with this statement but then they did their tests mostly on 32" screens - not the 50-60-70 inch monsters). Decision? Better be soon because whether 720P or 1080i, the folks who design, import and retail the receivers need some lead time to be prepared; *12 months and counting down.*

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Best performance



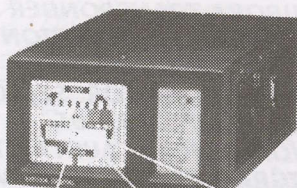
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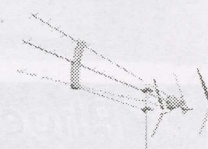
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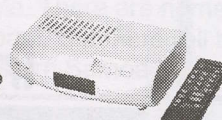
Zinwell 15K LNB \$24/each
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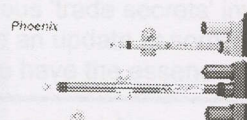
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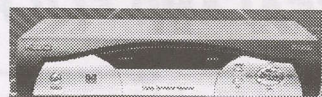
RG6 305m
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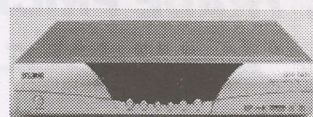
This Months Specials



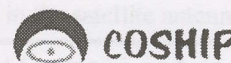
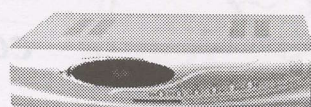
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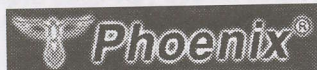
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Who says pioneering reception is dead!

One of the most amazing reports you will ever read - European TV in West Africa!

Coop's notation: This is a truly unconventional report. More than 3,000 miles outside of the fringe reception boresight circles for European satellite TV, an amazing super qualified Liberian based (amateur EL2BN) satellite engineer has done what many considered the impossible. There are numerous 'trade secrets' involved in this report, we promised to keep certain relevant facts out of print. But there will be an update at some future time and the cloak will then be off. Think of Optus reception in Western Samoa and you have the essence portrayed here.

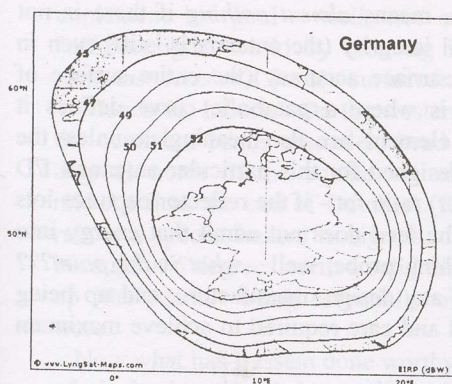
The basics first. Every satellite, whether C or Ku, has a terrestrial "focus point" on the ground, called "boresight" in the trade. This is the terrestrial area where the centre of the satellite's transmitting beam is hottest, 52 dBw (decibels above one watt) would be a big number in this scenario. Boresight is similar to an erupting volcano sitting on a smooth plain - the core is signal hot, and down the slopes of the built up material the depth and temperature of the lava flow is reduced until at some point there is no more lava flow; or in the case of a satellite coverage map, the signal has uniformly reduced in level until what remains is no longer useful with a "reasonable size dish."

About which. In the 1980's explosion of C-band private terminals, distance-disadvantaged folks stood in queue to be

'next' to obtain dish systems as large as ten metres. This was before Ku service was available and because of the (7.5cm) wavelength of C-band (4,000 GHz) a ten metre antenna was 13,333 wavelengths across. However, when Ku did become the prevalent transmission service, the much shorter wavelength (2.5cm) meant that for any given physical structure size, the gain at Ku could be equalled with an antenna 1/3rd the size of a C-band antenna. Numbers? If 50 dB gain was possible with a ten metre at 4,000 GHz, the same gain could be realised at Ku with an antenna diameter of 3.33 metres. A ten meter antenna is a monster (although hardly the largest one might employ in the C-band days) while a 3.33 metre antenna is almost manageable. But size is only a measurement - in the satellite antenna world, precision shaping

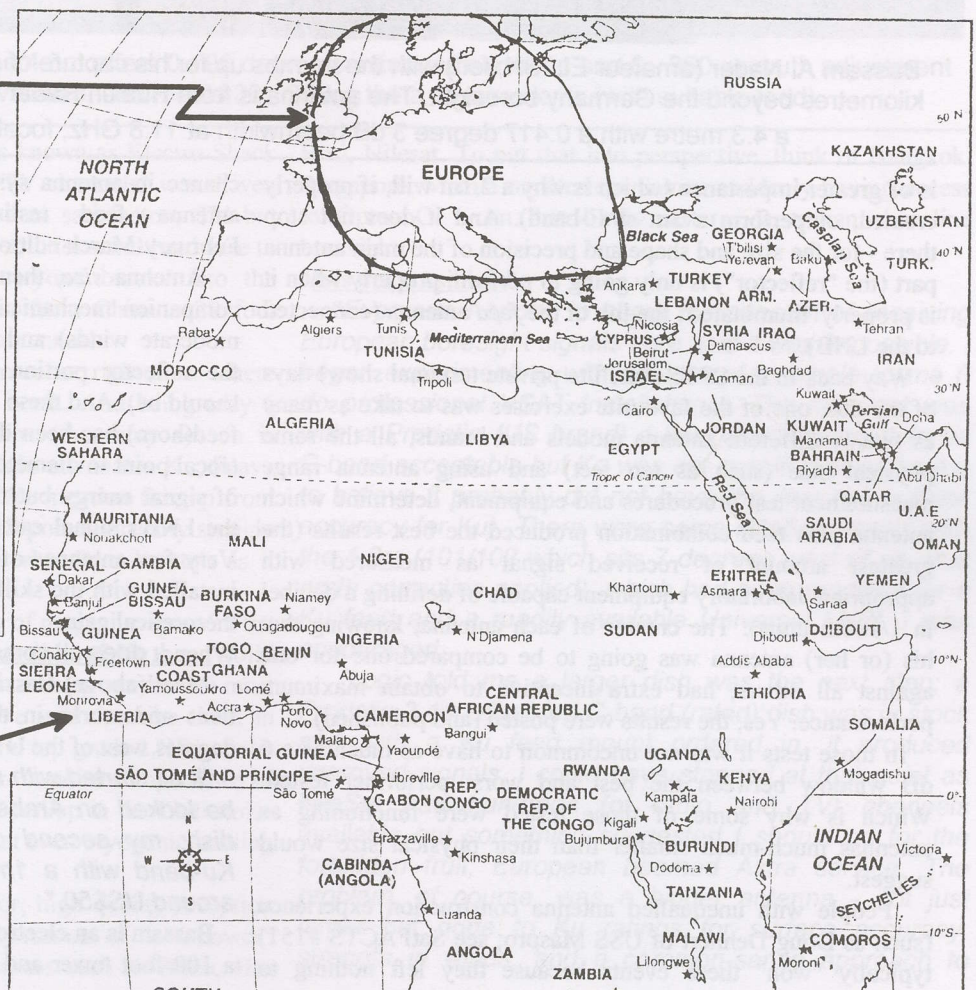
Illustrated: 45 dBw (65cm antenna) coverage limit Astra 3A boresight Germany, and way beyond boresight, perhaps 30 dBw, Monrovia, Liberia at 6 degrees north (the boresight centre being 52N).

**Source:
Lyngsat
Edge of 45
dBw 3A
contour**



**Monrovia
Liberia**

**Astra 3A
reception**





Bassam A. Nader (amateur EL2BN; left) with the thumbs up for his capture of Astra from Europe more than 5,000 kilometres beyond the Germany boresight. The antenna is from Huaxin Radar Engineering (www.hxantenna.com), a 4.3 metre with a 0.417 degree 3 dB beamwidth at 11.8 GHz; focal distance 1.505 metres.

is of greater importance (which is why a 2.1m will, if properly created, outperform a 3m at C-band). And it does not stop there - for the size and shape and precision of the main antenna part (the "reflector") is only going to perform properly when it is properly 'illuminated'; the job of the *feed* antenna (connected to the LNB).

Way back in the SPTS (satellite private terminal show) days of the 80s, one of the favourite exercises was to take as many as twenty different antenna models and brands, all the same physical size (such as ten feet) and using antenna range measurement test procedures and equipment, determine which antenna plus feed combination produced the best results (the greatest amount of received signal as measured with appropriate laboratory equipment capable of defining a decibel in 1/100th units). The creator of each antenna, knowing that his (or her) antenna was going to be compared one for one against all others, had extra incentive to obtain maximum performance. Yes, the results were posted (and published).

In those tests it was not uncommon to have as much as a 6 dB window between the best and worst performer tested. Which is why some of those tested were functioning as antennas much-much smaller than their physical size would suggest.

People with unequalled antenna construction experience (such as Doug Dehnert of USS Maspro; see SatFACTS #151) typically "won" these events because they left nothing to

chance in antenna system design (you may have read about antenna feed testing on www.bobcooper.tv in the February-March edition of Perspective 3).

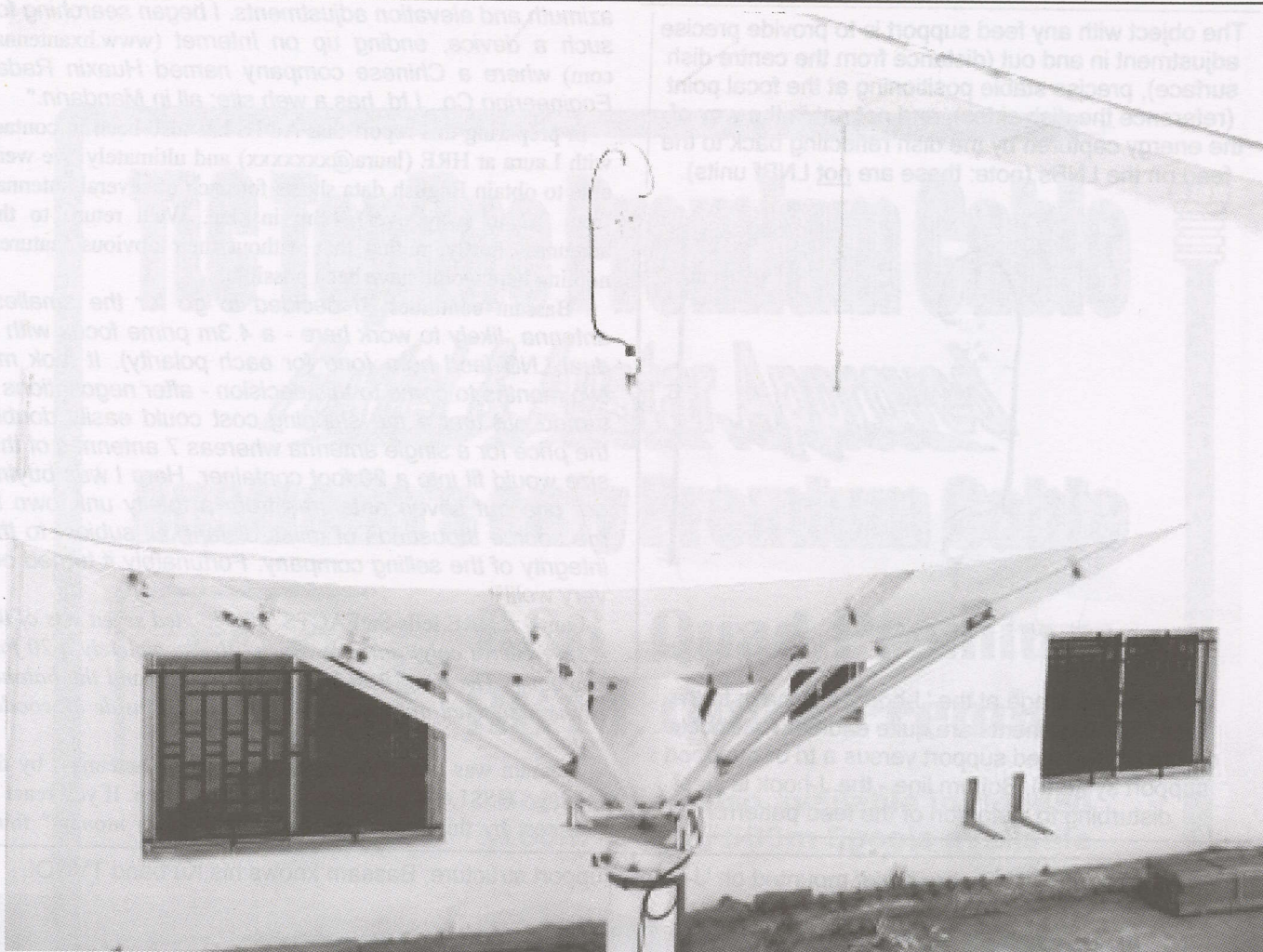
Antenna *size*, then, means *almost nothing* if there is not companion mechanical integrity (the antenna is 'stiff' even in moderate winds) and surface accuracy (the entire surface of the reflector portion is where a parabolic curve defines it should be). And these elements are also meaningless unless the feed(horn) has been designed for this particular antenna's f/D (focal point to diameter) ratio for - if the reflector captures lots of signal energy but the feed does not admit that energy *into* the LNB's signal catching probe, well - *what is the point???* Very few antennas of any design, manufacture, end up being installed with the skill and care required to achieve maximum theoretical gain.

When it does all come together

Meet (above) Bassam Abi Nader of Monrovia, Liberia. He lives and works in the vicinity of 6 degrees north and 11 degrees west of the UTC time line.

"It all started with me when it was getting very boring to be locked on Arabsat 2 C-Band with my 3.6m Orbitron dish; my second option was DSTV on Eutelsat W4 Ku-band with a 1m offset dish and a monthly fee of around US\$50."

Bassam is an electronics guy, an amateur radio operator with a 100 foot tower and a large short-wave rotating beam above



Essentially straight overhead, the 4.3m offers 0 - 90 degree continuous elevation and 0 - 360 azimuth adjustment (motorised version available) and meets 32 - 25 log theta requirements (with suitable feed).

his home, and he operates a business known as Electro Shack Inc. His initial interest in "different TV channels" was driven briefly by what he considered less than satisfactory TV but when he began to scope out possible solutions and hardware to implement his goal - well, not everyone breaks into the "off-boresight" world by ordering in from China a 20 foot container load of 4.3m Ku-surfaced antennas!

Monrovia, Liberia? On the western coast, right there where the continent bends around to head north. And being only 6 degrees north of the equator, it rains (the rainy season is mid-April to the end of October). Rain attenuates Ku, heavy rain is a special hazard to signals. We mention this up front because at 6 degrees north a solid dish points virtually straight up (the equator being essentially overhead); a bathtub as it were.

Now what has Bassam done worthy of magazine space? First of all, he has traced down a superior line of Ku band solid dishes - the kind you always dreamed of using at what we must note as, "seriously good pricing." We will describe them in some detail. Next, he has located some top grade LNBs which are honest enough to admit they have a noise temperature of 0.7 dB (at last - someone not so wrapped up in the LNB noise figure race to be claiming numbers that even cryogenic cooling cannot attain!).

The part you have been waiting for; high quality reception from a string of satellites that normally run out of "lava power" around 2,500 miles to his north - names such as Astra, Hot

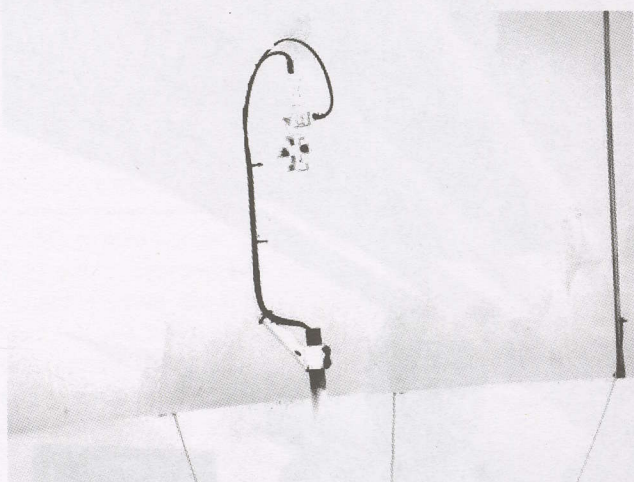
Bird, Nilesat. To put that into perspective, think of Bangkok, Singapore, Manila or Western Samoa suddenly having access to Optus C1 - on that bird's eastern Australian shoreline boresight.

"It is not possible..."

"Everyone I spoke to about the concept of receiving European boresight signals here said it was impossible. I began experimenting with equipment available to me (I do professional VSAT installations). The first test was with a Prodelin (US brand) 1.8m offset designed to be C-band acceptable but Ku was not specified (leading me to believe it probably did not have the required surface accuracy for Ku). There were some NileSat signals with the 1.8m (101/102 which sits 7 degrees west of us, true north correction applied), which had been modified for a Ku feed and a readily available Universal LNBf. I was encouraged.

"Logic told me a larger dish was the next step; a Prodelin 2.4m offset fed C-band (rated) dish was in stock and with a Ku feed mount ordered in, it produced improved signals. I could have stopped at that point as NileSat has hundreds (of radio and TV) channels available but something suggested I should go for the forbidden fruit; European beamed Astra service. The problem, of course, was a bigger antenna - not just larger but done to Ku ratings for surface accuracy, strength in winds, and a common-sense approach to

The object with any feed support is to provide precise adjustment in and out (distance from the centre dish surface), precise stable positioning at the focal point (reference the dish sides), and not get in the way of the energy captured by the dish reflecting back to the feed on the LNBs (note: these are not LNBf units).



Some might cringe at the 'J-hook' approach to the feed. The arguments are quite endless (a J-hook centre of dish feed support versus a tri or quadpod support system). Bottom line - the J-hook is least disturbing to distortion of the feed pattern.

azimuth and elevation adjustments. I began searching for such a device, ending up on Internet (www.hxantenna.com) where a Chinese company named Huaxin Radar Engineering Co., Ltd. has a web site; all in Mandarin."

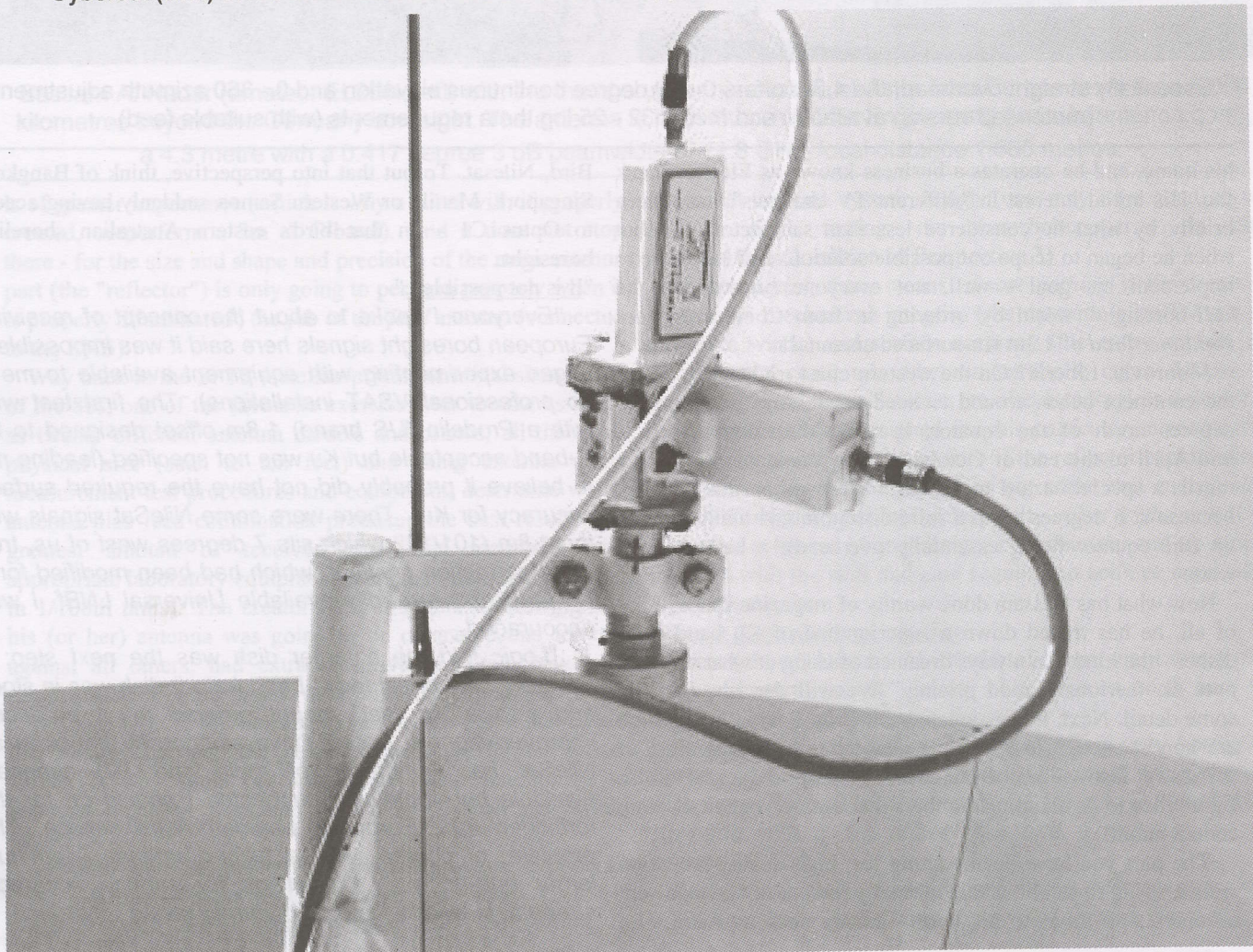
In preparing this report SatFACTS has also been in contact with Laura at HRE (laura@xxxxxxx) and ultimately we were able to obtain English data sheets for each of several antennas from 2.2 to (way over) 4.3m in size. We'll return to the antennas shortly, noting that without their obvious features, nothing here would have been possible.

Bassam continues: "I decided to go for the smallest antenna likely to work here - a 4.3m prime focus with a dual LNB feed horn (one for each polarity). It took me two months to come to this decision - after negotiations it turned out that a the shipping cost could easily double the price for a single antenna whereas 7 antennas of this size would fit into a 20 foot container. Here I was buying not one but seven antennas from a totally unknown to me source thousands of miles distant, all subject to the integrity of the selling company. Fortunately it turned out very well!"

Laura at HRE tells SatFACTS, "We loaded seven sets of the 4.3m (receive only) antenna which filled completely a 20 foot container. The King Post is wrapped in flax and the balance of the individual antenna parts were placed inside of wooden crates."

Bassam was driven to a full container (7 antennas) by the pricing - US\$1,600 per antenna in lots of seven. If you react to that cost by thinking, "Hey - that is a lot of money!" think

Cybersat (twin) LNBs are offset mounted on 'J-Hook' support structure; Bassam knows his Ku band TVRO!



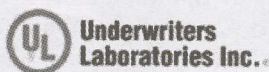
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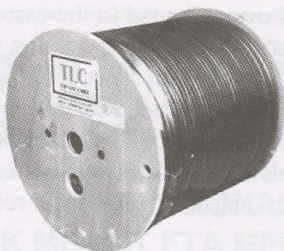
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**RG6 Quad Premium
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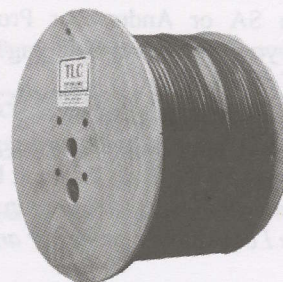
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Wooden Spool**



**RG6 Quad 305m
Easy Pull "waxy" box**



**RG11 Quad 305m
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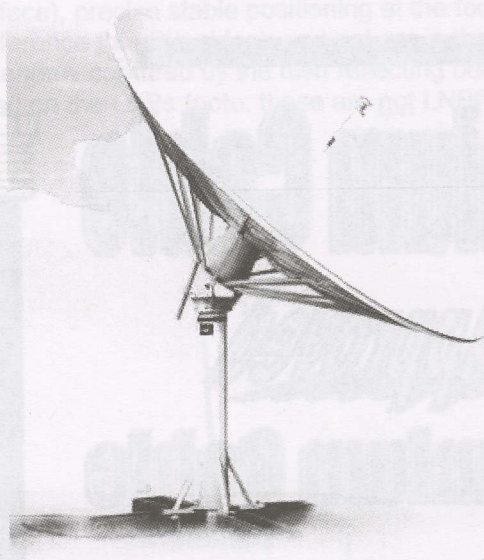
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This is .35 dish requiring a scalar feed

Huaxin Radar 4.3m Motorized/Manual Receive Only Antenna

Stretch formed aluminium major reflector surface (panels) using "rod technique" to stretch panels followed by riveting to form the reflector. Column type seat (see photo, page 8), cylinder type high stability centre frame; corrosion protected. Available for C or Ku band use, manual polar mount or motorised (optional extra); Optional linear or circular polarisation (feed).

C-band specs:

Frequency coverage 3.4 - 4.2 GHz; (Feed) insertion loss - 0.25 dB; Feed interface WR229; -3 dB beamwidth - 1.24 degrees; Sidelobe level - 32-25 log theta; first sidelobe level - minus 14 dB; Gain - 42.45 dB at 3.8 GHz; Noise temperature - 36 degrees Kelvin at 10 degree elevation; Antenna optics - Feed forward; Elevation adjustment -0 - 90 degrees fine adjustment in mm steps; Azimuth adjustment - 0-360 degrees in mm steps (manual) and +/- 85 degrees when motorised. Wind loading - 45mph/72kmph to maintain position (operational), 60 mpg/97 kmph with decreased position, Survival (in fixed straight up posture) 125mpg/200kmph; Seismic survival - 0.3Gs horizontal, 0.15 vertical.

Ku band specs (where they differ from C-Band):

Frequency coverage 10.95 - 12.75 GHz; (Feed) insertion loss -0.30 dB; Feed interface WR75; -3 dB beamwidth 0.417 degrees; first sidelobe -14 dB; Gain - 51.92 dB at 11.8 GHz; Noise temperature - 52 degrees Kelvin at 10 degrees elevation. Manufacturer: Wuxi Huaxin Engineering Co. Ltd, No. 11, Jinshan Road, Hui shan District, Wuxi, Jiangsu, China. Tel +86 510 8273 8216; fax +86 510 8273 8215; Email sale@hxantenna.com, www.hxantenna.com.

again. Price a SA or Andrew or Prodelin and see what US\$1,600 gets you. Not much! Shipping? On top of US\$1,600 per antenna, of course.

A 4.3m professional grade antenna (of which this is certainly one) does not fold up in a cardboard container or "package" easily (or cheaply) by itself. As Laura at HRE tells SatFACTS, "Our prices are according to quantity - I must know the quantity before I can quote a price per antenna."

Dish # one

Bassam continues: "I installed the first 4.3 in about 3 days because we were working on a building rooftop which was a bit narrow and I can tell you one thing, the dish is exceptionally well designed. I was instantly impressed with the quality of the king post, the panels and the supports; everything about it is well engineered. Assembled and on the strong kingpin mount, it was time to track NileSat. There was a new learning curve here (Editor's note: The 3 dB beamwidth of a 4.3m on Ku is 0.417 degrees wide - a C-band dish with the same beamwidth would be 12.9 [13] m across). As our previous experience was with offset dishes, where one could reach the feed and make minor skew and other adjustments, with a prime focus dish that essentially points straight up, the dish had to be laid over on its 'side' to tweak on the azimuth and LNB (probe) skew. So down, adjust, resweep, down again and so on - we were learning just how precision a dish of this size is. The stronger transponders on NileSat appeared, and I quickly worked out the habit of finding the weakest one on the satellite and concentrating on making it of a usable level. At the end, each was well above threshold and I was for a period of time the happiest man on planet earth!"

NileSat is a twin satellite operation, 7 west, which makes it essentially straight above and a tad to the east of Bassam's 11 west location. NileSat's programming options were an instant hit with Bassam's customer and in short order dish number two was out of the container and headed for a new home. Interest in what he was doing spread rapidly, even in a country of depressed wage levels there will always be some people who can afford a monster antenna if the end result is alluring enough.

"The third one went to my own home, the better to demonstrate potential reception; and now I was ready for the supreme test without an anxious client hanging over my shoulder demanding that I 'stop now and leave it alone!' (when nailed to NileSat). The target would be ASTRA and HOTBIRD, both with published footprints that ceased to be predicted useful nearly ten countries (nations) to our north."

There was a period of time when satellite operators quite proudly published their footprints as an assist to anyone planning to use their satellite. Locating such prints for most satellites these days involves going to the host firm's site and then struggling through very limited data. Another source is www.lyngsat.com (select appropriate satellite, click on "Lyngsat Maps", more convenient but for serious work such as Bassam was attempting, essentially complex information). Lyngsat maps use 3 or 4 colours to suggest rings of coverage, starting with red at boresight, meandering through yellow (may look green on some) and ending with an outer circle of blue. Land mass areas falling under one of these colours should be accessible by some ill-defined size of antenna. There is the suspicion that Lyngsat maps are ultra-conservative not wishing to encourage false hopes that a service such as the ASTRA 3A Germany boresight service might be available beyond the

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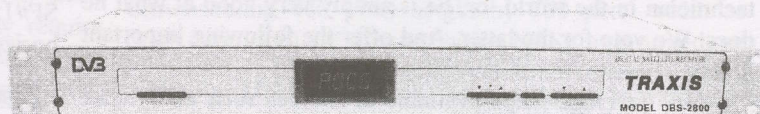


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fuzzy coloured circles. Bassam is approaching 6,000 kilometres beyond the German boresight yet he has perfect digital reception; obviously the Lyngsat three coloured bands leave something to be desired. Once on a 'Lyngsat Map' click on the postage stamp sized map for a larger presentation.

"My German and Swiss friends in Monrovia could not believe I was even attempting the ASTRA reception. But after one day of fruitless searching, I discovered that the dual-band LNBs we had initially selected had some sort of fault. I changed them with single band LNBs and promptly nailed ASTRA including some important transponders carrying all of the German and Swiss channels. That was impressive! Hotbird was a close call - but will require the next size up antenna (6m Ku surface rated!) and given the quality and abundance of the hundreds (if indeed not thousands) of ASTRA channels, I doubt we will be doing that soon. Personally, I am pleased with the NileSat channels (350 channels) as it includes SHOWTIME scrambled channels with a number of bouquets."

It would be an exercise in futility to try to guess what the dBw (actual footprint level) is for Monrovia; the 0.7 dB noise figure (Cybersat brand) rated LNB and the fractional under 52 dB gain of the Huaxin Radar Engineering 4.3m dish suggests subject to heavy rain Bassam is making do with signals that are very close 30 dBw - a full 22+ dB outside of the boresight level (where a 65cm dish might be overkill).

"We have had rain twice since the third antenna was installed and the signals held; the real test will be when the monsoon period arrives in mid-April. I always follow the same procedure in peaking a particular satellite; first find the satellite, and as there is (at least in my location) a variety of signal levels, I select the weakest one and work the LNB focusing, LNB skew and LNB centring until that transponder is maximised. When that is done, the stronger ones are of course peaked as well."

The reality here

Bassam A. Nader is either the luckiest deep-fringe satellite technician in the world, or, he is simply very good at what he does. We vote for the latter. And offer the following important points.

First, coverage maps available at sources such as Lyngsat mY bare little relationship to "real" coverage. Doubtless they mean well, but are hopelessly mired in a world of 1.2 and smaller offset dishes.

Second, careful choice of equipment is far more important than browsing for the best price on a mass produced anything. Bassam 'discovered' HRE buried in China, and has since shared his new knowledge (and personal experience with the product) with others. Antenna surface accuracy, the precision with which it emulates the curve of a parabola, is not something that happens accidentally or for US\$300. A "big" dish is simply a large structure; a "high gain dish" is quite another device.

Third, technique counts for everything. And that includes, in this case, Bassam's decision to toss out some "Universal low noise LNBs" which he found readily available in favour of a much harder-to-locate quality LNB. If he had stuck with "published noise figure" specifications, the Cybersat 0.7 dB noise figure LNBs he finally employed would have never been selected over the over-hyped, unrealistic 0.3 dB claims of a competitor. In his amateur radio trained mind, he suspected (quite correctly) that 0.3 dB had to be in error and if that was in error, what else might the LNB supplier also have

incorrectly? You will recall he tried the "Universal 0.3 dB" versions first and came up wanting; his technology trained mind told him that short of cryogenic cooling, the number was unrealistic and by going back to the folks that supplied the antenna, he was able to locate the LNBs that ultimately made the system play.

Fourth, this is no game for first timer amateurs (in *this* case an amateur is not a 'ham radio operator' but rather someone who has lived in a world of 1m and smaller offset dishes fed with \$15 LNBfs).

"The adjustments to the skew of the LNBs, the precise focal point for this dish surface, all took millimetre size bite adjustments. When I first saw a spectrum indication of Astra (1E/1F/1G/1H/1KR/2C) the adjustment steps were immediately cut in half - rather than 4mm bites, we took 2mm adjustments. This was not a "slam dunk" and "thank you m'am" installation; this was our first with such an out of boresight bird and we wanted to get it totally correct. Remember, the local German and Swiss natives were only going to be satisfied if we had perfect reception and I was going to squeeze the last 0.1 dB out of the system!"

Can this be duplicated?

Huaxin Radar Engineering claims 51.92 dB of gain for this 4.3m dish at 11.8 GHz (that would be over 52 dB at 12.25 GHz - shorter wavelengths - higher frequency). As a reminder, that says a C-band antenna of 13m size for the same amount of gain. This antenna, at C-band, claims 42.45 dB of gain by the way (at 3.85 GHz).

Therefore, logic suggests that in an area where a 13m C-band dish might be required, this antenna chasing a Ku-band footprint would do as well - at about one-third the physical size. The antenna can be motorised (see page 12 here) as well but note that in tracking across the sky from bird to bird your skew adjustment will quickly become a problem (skew = polarisation of the incoming wavefront and as the satellite location changes relative to you, the vertical and horizontal formats also change or twist as we verified with our 7.2m antenna tests of USA domestic signals here at SatFACTS - SF#151, page 10; in our case, vertical became horizontal and horizontal became vertical).

Post script - Huaxin Radar

These folks obviously have not just sprang up out of a closet; there are strong indications here that perhaps their past includes a (Chinese) military association. There are clues:

1/ The 4.3m antenna described here is in fact one of their 'smaller' size dishes;

2/ Beyond 4.3 there are 5.36, 6.0, 6.2, 7.3 - and - 9, 11.3 plus of course the one everyone desires, their 16m fully motorised model.

A 47 page (web available) catalogue is a study in engineering perfection, at least on paper it is the equal of brand names such as Scientific Atlanta (which does not offer a 16m version), Andrew, Harris, Vortex and virtually any other big-league name you might mention.

There are receive only and receive plus transmit models from 45cm to huge, including a large range of offset fed antennas for Ku applications. For each antenna the web posted catalogue provides detail which indicates these people not only know and understand antenna design but practice it with skills that should shortly make them the number one supplier of container-load antennas in the serious world (www.hxantenna.com)

Here is another view of the Freeview receiver question

Motorhome Show Hamilton (NZ) March 1 - 7, 2007 features Freeview

Hamilton: March 1-4

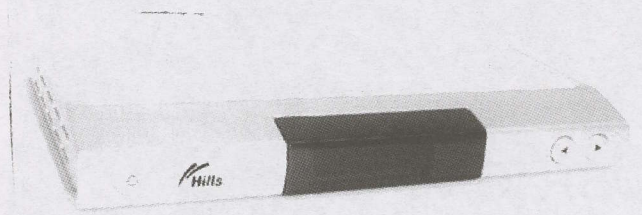
What a great show, especially for those with deep pockets; new Trailite for \$204,000 or one of the more fancy homes on wheels for considerably more!

The highlight of the show for me was the abundance of satellite equipment; the market is truly coming into its own as a profit centre. The top featured hardware would be the Oyster fully automatic satellite receiving system (for trailer, motor home installation) at (NZ)\$4,999. SatMax of Christchurch had two fully automatic dishes on display as well as the Oyster which has an offset arm. They also had a Cosmos 60cm prime focus dish with a snow cover installed. The construction of the Cosmos is from aircraft grade aluminium and UV stable plastic. Both dishes ran on automatic seek for much of the 4 days which was a testament to the quality and reliability of construction.

Over at the Hills stand they were promoting their Freeview satellite receiver which is very small but packed with excellent features including a pair of SCART outlets. One is CVBS composite but the SCART is tied to the receiver menu and can select either CVBS, S-Video, YUV component or RGB allowing it to deliver the best possible picture to virtually any display screen the user might connect. I was unable to view the picture on a large display screen, but did make a comparison between two satellite receivers using the same (smaller) screen. The Strong STR3500, which I handle, had a reasonably good picture - quite satisfactory by satellite standards. However the Hills, when connected through RGB to a 32 inch, was a significant improvement in image quality, especially on close-up facial shots with even the fine facial hairs clearly visible. The TVNZ news readers may require additional time in make-up as quality images become more available - TVNZ might be advised to upgrade, promptly, their studio cameras as what I assume to be higher resolution outdoor cameras clearly look better; the studio camera images now look second-rate.

The Hills display of the Electronic Programme Guide is feature laden and you are able to select a channel directly from the display (select, point and go to). I can verify the Hills Freeview is equipped with MHEG5 middleware (there have been conflicting reports on this). There is an optical jack for digital sound and curiously a telephone jack (1). This is a 12 volt model receiver, certainly ideal for motor home users (not using a 24 V system) and comes with a 230 volt adapter for home use. The shortcoming I noticed is a lack of an RF output making it impossible without an outboard modulator to feed service to a second set via coaxial cable. I look forward to having one in my home to test and review on a 50 inch plasma screen!

Editor's note: 1/ Which, as it turns out, is a remote sensor socket for the IR; NOT a telephone connection.



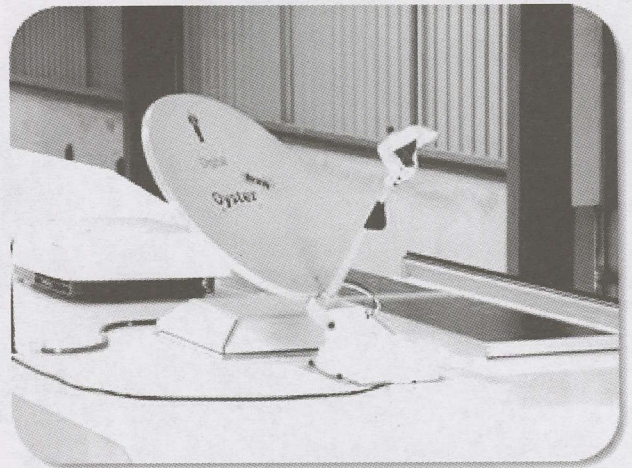
Hills Freeview receiver includes remote IR sensor socket - not telephone - on side panel.

The Hills site at the Motor home show allowed them to set up a dish inside of a building and still 'see' D1 through a dimple-glass window. The receiver still showed a 70% quality which speaks to the sensitivity of the unit.

Many exhibitors were displaying dishes of various sizes and I must compliment Allan Rees of RV Wholesale Supplies who was selling satellite dishes from 60cm down to 45cm. In his explanations I stood to the side to overhear, he made it abundantly clear the recommended dish size would be 60cm and with a smaller dish (such as the Antenna-Tek 48cm crank-up dish) there will be increased (rain) fade problems. The disappointment of the show was the Majestic Satposio Automatic Tracking System. The reflector area for this system is very small and I am concerned for those who might purchase it. Independent testing showed the standard 65cm dish had a 14 dB signal to noise ratio on D1 while the Majestic tested registered 3.1 dB. Even a heavy, dark cloud was enough to stop the dish from performing.

The 'con' of the show? In my opinion, those who were demonstrating 480 pixel height by 720 pixel width as HD (high definition) TV; low definition NTSC as it turned out!

Bonner Martin: "The mobile installation market will be sizeable. I have been holding training seminars to teach people with a manual adjust system to locate D1; hands on demonstration works, even for those 80+!"



Bonner Martin, Bonlor Communications and TV Antennas, 47 Fairview Road, Katikati Email
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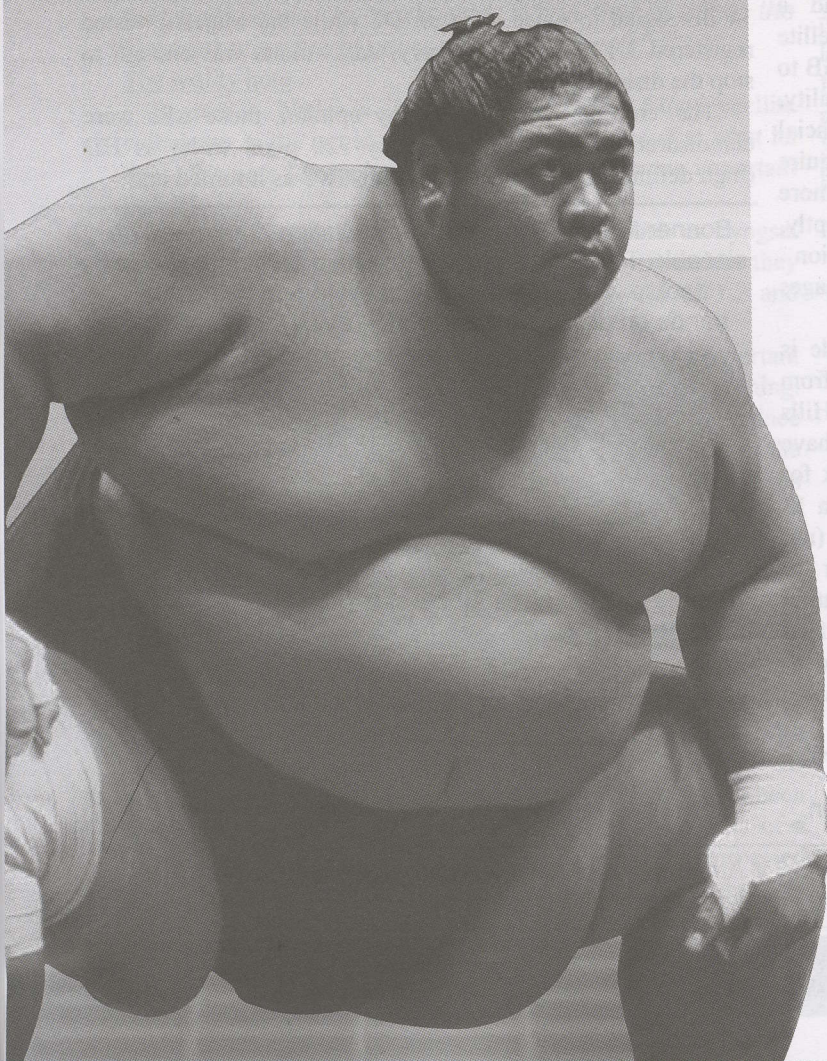
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Somebody up there does not like Freeview

SO



Somebody parks in Freeview's driveway?

An analogy. Steve Freeview leaves work, drives home, activates his garage door remote control and tucks his transportation away from the night. The next morning, returning to his vehicle, he pushes the inside garage door opener button, turns to enter his vehicle and the door after lifting a few cm grinds to a stop. On bended knee, his eyes survey the outside world discovering a new, totally strange car is not only in his driveway but is almost against the closed garage door.

Someone has parked in Steve's driveway, his car is stuck inside, and further investigation reveals the car is (1) locked, (2) totally unknown to him or upon inquisition his family or neighbours. The registration and WOF in-window envelope is missing, there are no license plates on the apparently abandoned car.

Freeview operates on 12.483 horizontal across New Zealand. Towards the end of March, a second signal appeared in the airways operating either at or very close to 12.483 - vertical. Those who install Freeview dishes were early to discover this unusual signal because they were following a procedure for mounting an LNBf; as follows.

1/ First you place the LNBf in what is assumed to be the horizontal position and adjust the dish with the receiver set to Freeview's 12.483 frequency (Sr 22.500, FEC 3/4). This aligns the dish (azimuth and elevation).

2/ The signal found, you now rotate the feed for a null - to eliminate the horizontal side to ensure that a mis-polarised LNBf will not capture any energy which might *someday* be coming through on the vertical side; and then reposition the LNBf for the horizontal signal.

This is the point where the abandoned vehicle in Steve's driveway appears. It - *a signal* that appears to be on the same transponder (frequency) as Freeview - makes it impossible to locate a 'null' - as the feed rotates the horizontal "peak" transitions to the vertical "peak," leaving you stuck in the garage.

The reality is that you should first of all not be starting on 12.483 *at all* - nor on what you assume to be at or close to horizontal. The easiest and best way to locate D1 is not by searching for the three (presently available; below) horizontal signals but rather by using one or more of the Sky vertical transponders to peak the dish. Select any of the bold face listings (ie. **12.608**) below to establish the dish's azimuth and

D1 Vertical available to New Zealand

Vertical: **12.394**, **12.420** (both also covering Australia),
12.519, 12.546, **12.581**, **12.608**, **12.644**, **12.671**,
12.707, **12.734**

D1 Horizontal available to New Zealand

12.456 (TVNZ/Freeview test; not currently in use),
12.483, 12.519 (note this is same frequency as vertical set 12.519), 12.546 (note this is same frequency as vertical set 12.546).

Bold face (ie. **12.608**) indicates a transponder to use for cross pole nulling

	12.457	12.483	12.509
Hz		Freeview	
Vt		12.472	12.498

The New Zealand view - based upon extrapolation of the present 12.483Hz transponder in use by Freeview.

	12.469	12.487	12.514
Hz		SBS South	
Vt		12.487	
		SBS "echo"	

The Australian view - based upon existing Australian beam D1 services now in operation.

elevation peaking; do not begin with 12.483 (all parameters are the same: Symbol rate 22.500, FEC 3/4). Once the dish is receiving peaked (vertical) signal, then (leaving the receiver tuned to one of the **bold face** frequency listings below) carefully rotate the feed until the vertical signal is nulled (disappears). *Stop right there* and tighten up the LNBf captive screws/nuts. The null point for the vertical polarity happily coincides with the "peak" signal from the horizontal side. Finally, retune the receiver to 12.483 and bingo - there will be Freeview.

And if it has drop outs or other interference problems? Either you were careless with the vertical nulling, the original dish peaking was not in fact peaked, or - - -

- 1/ The LNBf is suspect
- 2/ The receiver is suspect
- 3/ You have a "signal/car" abandoned in your driveway!

Suppose somebody didn't want you to get your garage door open the next morning? Or more to the point, they were interested in making Freeview difficult to access?

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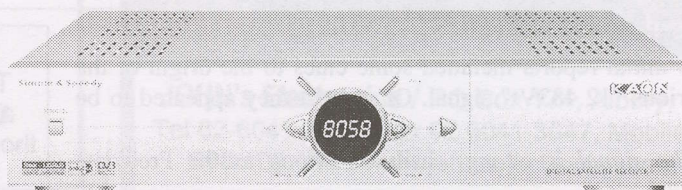
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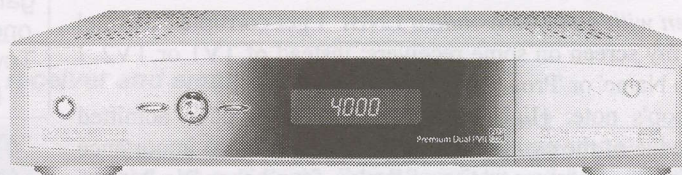
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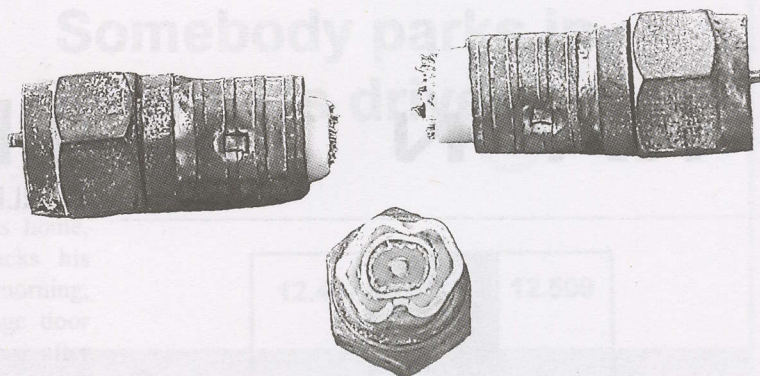
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The cowboys are back

"My speciality market is the RV and mobile camping rigs which Kiwis so adore - and the growing percentage who prefer to take their Sky (and now Freeview) 'with them' during their travels. (1) I recently have had a brush with five (in one week) RV installs done by somebody who either does not understand the importance of proper RG6 connector crimping, or, never knew. The photo here illustrates. After diagnosing why these systems did not seem to function as they should, I was led to the two F fittings in a typical installation; one at the LNBf and the other inside the RV at the receiver. Each of the 5 installs had an identical problem and



all were traced to the method used to affix the connector to the cable ends. Note the cable as well - a single braid shield. Study the two complete connectors and note the single 'inward dimple' on the crimp ring - there are two total, on more or less opposite sides. Now study the centre photo which is what I found after cutting the connector sideways at the two dimple points. The outer crimp ring's twin 'dimples' clearly show - they were dented into the inner ring which may or may not end up making electrical contact with the braided shield that rests inside of the inner ring. Of course the two dimple-crimps did very little to keep moisture out of the LNBf end of the line (the connectors won't show it here but they are badly corroded) and the ground side of the line (the braid) would have measured with significant resistance (thereby creating signal loss in the system). In this business, a man is still measured by the quality of his crimps!" (Bonner Martin)

(1) See Bonner's Hamilton RV Show report page 15.

About which...

The initial reports included some clues to the origin of the mysterious "12.483Vt" signal. Or at least they appeared to be clues.

"The signal is strong, easily as strong as the Freeview signal."

"It seems to be much worse when using the (Sky) dual satellite LNBf (with two throats out front - one for D1 at 160E and one for C1 or some future Optus satellite to be at 156E)."

"If you tip the (dual throat) LNBf physically up, higher on the dish, it seems to either go away or is weaker."

"And there is another reason not to fall in love with the dual throat LNB Sky has designed for 160 and 156E; when you try to null the (LNB) housing for one bird (such as D1) how far off will you be when they finally activate 156? Even a very slight flight error for 156 is going to throw the whole system out of whack."

"Even with a perfectly nulled LNBf I get corrupted channel ID on my screen on some receivers; instead of TV1 or TV2, I get 'No Name' or 'Program 1'."

Coop's note: High level Freeview folks have admitted knowledge of the extra carrier but claim it is of no importance to their successful operation. SF also found that 'No Name' and/or 'Program 1' is what comes up even with an "almost perfectly nulled" LNB - but cannot discount that Freeview's EPG software is or was 'acting up' when we did our check - meaning it could be Freeview that is transmitting these channel names on occasion.

"When I scan 12.483V (after doing a proper null of horizontal), my receiver registers no Sr or FEC suggesting this is not an MPEG family service."

"I had a problem with a client who had been watching B1 (Vt) and in swapping over to D1 (H) he never found the Freeview service - I appreciate that nulling without a meter of some sort is difficult but this does not bode well for DIY folks."

Could 12.483V be terrestrial?

There are some observers who apparently (we say apparently not knowing the skills or qualifications of those doing the checking) do not 'see' or 'measure' the mystery signal. In fact, the great bulk of reports originate in and around Auckland. So - could it be a terrestrial signal, perhaps radiating out of Sky Tower or Waiatarua?

MED files show no (Auckland or other area) terrestrial transmitter on or near 12.483 (V or H).

What there is consists of: 12.338V (functional) and 12.266V + 12.216V (latter is out of satellite band) from the 62nd (floor) level at Sky Tower. At Waiatarua, the signals are 'turned around' on 12.338H, 12.266H and 12.216H - although at this time only 12.338 is fully functional. Transmitter power levels, before antenna gain, is in the region of 5 watts per carrier. And there is one, frequency unknown, TVNZ "DDNlink" also on Sky Tower (to Waiatarua). Could one of these be 'the guilty party parked in Freeview's driveway?' (T.Dunnett)

"Here in Taupo I measure the vertical signal occupying from 12.480, peaking at 74 dB at 12.489 and then falling off at 12.495."

"It is a problem all over NZ, not just in Auckland according to my reports."

So - who is parked here?

The answer is unknown as SatFACTS goes to press. Normal Optus assets (information sources) have to date failed to provide any hints or answers. If the Taupo measurement (above) is reasonably accurate, the mirror image of SBS on the Australian beam (diagram, page 18) might provide a clue - save that it is not SBS; to date nobody has been able to decipher the usual MPEG symbol rate and FEC data from the service. It is merely a signal - data perhaps - parked in front of Freeview's garage door.

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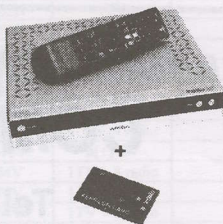
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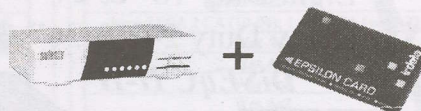
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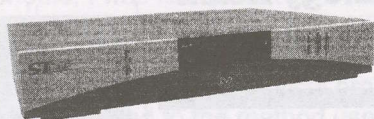
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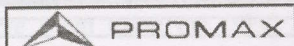
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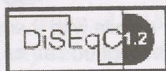
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SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 April, 2007

Bird	Service	RF/IF &Polarity	# Program Channels	FEC	Msym
Thom5/78.5	SkyChAust	3695/1455H	up to 3	3/4	5(,000)
	ANT Greece	3672/1478H	1 TV	3/4	13(,333)
	TARBS ME mux	3640/1510H	12TV, 12 radio	2/3	28(,066)
	Ch Nepal	3626/1524V	1	3/4	15(,556)
	Mahar mux	3600/1550H	11TV, 1 rad	3/4	26(,667)
	RR Sat mux	3551/1600H	8TV, 10 radio	3/4	13(,333)
	TVK Cambodia	3448/1702H	1TV	1/2	6(,312)
	TARBS/Th5	3480/1670H	12 TV+radio	2/3	26(,667)
	Thai Global	3425/1725V	up to 7?	2/3	27(,500)
InSat 2E/83	ETV mux	4005/1145V	6+ TV	3/4	27(,000)
	Hyd Dig 2E	3910/1240V	1	3/4	5(,000)
	Kairali TV	3699/1451V	1	3/4	3(,184)
	Indian mux	3643/1507V	3	3/4	19(,531)
	Sky Bangla	3430/1720V	1TV	3/4	6(,000)
NSS6/95E	Ant Pac (Greek)	11.104H-Australia	1 TV	3/4	2(,800)
As2/100.5E	Guangdong TV	4075/1075H	1TV + radio	3/4	6(,000)
	Euro Bouqt	4000/1150H	5TV, 19 radio	3/4	28(,125)
	SatLink	3960/1190H	3TV	3/4	27(,500)
	Reuters News	3905/1245H	1TV	3/4	4(,000)
	WorldNet	3880/1270H	4+/18radio	1/2	20(,400)
	APTN Asia	3799/1351H	1	3/4	5(,632)
	Reuters/Sing.	3775/1375H	1	3/4	5(,631)
	Macau MUX	4148/1002V	5TV	3/4	11(,850)
	Dubai MUX	4020/1430V	4+, radio	3/4	27(,500)
	Russian/Israel	3832/1318V	up to 4 video	3/4	7(,271)
	ArabSat#2	3820/1330V	8+ video?	3/4	27.5
	Trace TV	3792/1358V	1	3/4	2(,400)
	BYU-TV	3767/1383V	1 + 20 audio	1/2	6(,530)
	3-ch miniMUX	3752/1398V	up to 3	3/4	5(,640)
	Saudi TV1	3660/1490V	7+/tests	3/4	27(,500)
Express2/103E	Various-tests	3675/1475R	2	3/4	4(,340)
As3S/105E	Chinese regionals	3671/1471V	2	3/4	8(,932)
	CETV digital	3680/1470H	1+ TV	3/4	26(,670)
	Zee bouquet	3700/1450V	10TV	3/4	27(,500)
	Ch News Asia	3706/1444H	1TV (+)	3/4	6(,000)
	Azio TV	3716/1434H	1TV (+)	3/4	7(,000)
	BTW World	3725/1425V	1TV	3/4	4(,450)
	TVB 8	3729/1421H	1TV	3/4	13(,650)
	Zee Movies	3732/1418V	3TV	3/4	6(,500)
	TV One	3739/1411V	1TV	3/4	2(,8934)
	SAB TV	3743/2407V	1TV	3/4	3(,300)
	Fashion TV	3747/1403V	1TV	3/4	2(,625)
	AAJ-TV	3750/1400V	1TV	3/4	2(,820)
	Airang TV	3755/1395V	1	7/8	4(,418)
	Now TV +	3760/1390H	up to 10TV	7/8	26(,000)
	Star TV	3780/1370V	7(+)-TV	3/4	28(,100)
	GXTV	3806/1344V	1TV + 3 radio	3/4	4(,420)
	Shaanxi TV	3813/1337V	1TV + 2 radio	3/4	4(,420)
	Anhui TV	3820/1330V	1TV + 2 radio	3/4	4(,420)
	Jiangsu TV	3827/1330V	1TV + 2 radio	3/4	4(,420)
	HLITV	3834/1316V	1TV	3/4	4(,420)
	Star TV	3840/1310H	7(+)-TV	7/8	26(,850)
	Star TV	3860/1290V	5(+)-TV	3/4	27(,500)
	Dragon TV	3886/1264V	1 TV	3/4	4(,800)
	Shaandong	3895/1255V	1TV + 6 radio	3/4	6(,813)
	CCTV1	3904/1246V	1TV, 1 radio	7/8	4(,420)
	Jilin TV	3914/1236V	1TV + 2 radio	3/4	4(,420)
	Star TV	3920/1230H	4+ TV	7/8	26(,850)
	CNNI	3960/1190H	8TV, 1 radio	3/4	27(,500)
	StarTV	3980/1170V	6+TV	3/4	28(,100)
	Star TV	4000/1150H	8(+)-TV	7/8	26(,850)
	Sahara digital	4020/1130V	8TV, 1 radio	3/4	27(,250)
	Hubei TV	4035/1115H	1TV + 2 radio	3/4	4(,420)
	Tianjin TV	4046/1104V	1TV + 2 radio	3/4	5(,950)
	Sichuan TV	4051/1099H	1TV + 1 radio	3/4	4(,420)
	Qinghai TV	4067/1083H	1TV + 2 radio	3/4	4(,420)
	Hunan TV	4082/1068H	1TV + 1 radio	3/4	4(,420)
	Fashion/HK-Asia	4088/1062H	1TV	3/4	2(,626)
	Pakistani TV	4091/1059V	4TV, 1 radio	3/4	9(,330)
	Sun TV	4095/1055H	1	3/4	5(,554)
	PTV National	4106/1044V	1TV, 1 radio	3/4	3(,333)
	TVB8 Mux	4111/1040H	4 TV	3/4	13(,650)
	Indus News	4115/1035V	1	3/4	3(,331)
	CCTV bqt	4129/1021H	4 TV, 4 radio	3/4	13(,240)
	Zee Bqt #2	4140/1010V	8(+)-TV	3/4	27(,500)
	Henan TV	4166/984V	1TV + 8 radio	3/4	4(,420)
	Fujian TV	4180/970V	1TV + 2 radio	3/4	4(,420)
	Jiangxi TV	4187/963V	1TV + 2 radio	3/4	4(,420)
	Liaoning TV	4194/956V	1TV + 2 radio	3/4	4(,420)
Cak1/107.5	Indovision (S-band)	2,535, 2,565, 2,595, 2,625, 2,655	33(+)-TV	7/8	20(,000)
T'Kom/108E	IndoBqt	3460/1690H	up to 6	3/4	28(,000)
C2M/113E	TPI	4185/965V	1	3/4	6(,700)
	Anteve	4144/1006V	1	3/4	6(,510)
	Kabelvision Mux	4080/1070H	7+ TV	7/8	28(,125)
	Indostar	4074/1076V	1	3/4	6(,500)
	SCTV	3934/1216H	1	3/4	6(,620)
	Indo MUX	3880/1270H	3+ TV	7/8	28(,121)
	TVRI	3765/1385H	1TV	3/4	5(,555)

Receivers and Errata

CA (#1, 3); FTA audio #2
Late July 04: room for more (FTA)
CA + 23FTA(A1TV, IRB3, Visjon Norge, Pakistan)
New 03/03; FTA
Thai + Indian services; FTA inc. Vibe TV, Sindh TV
3TV, 5radio inc. Hellas TV Greece FTA
FTA
3FTA: TV5, VTV4, ATN Bangla
FTA (reaches SE Australia)
Several ETV now here; wide beam
SCPC, OK E. Aust. wide beam
SCPC, OK E. Aust wide beam
corrections 12/02
New - November 2002
Now CA; was 11.083H
July 04: FTA
FTA TV + radio; Russia,Port,Spain, Italy/Euro Bqr
Real Madrid (V769, A770) English FTA
Was 3923H; sometimes FTA
FTA; multiple audio services V2360, A2320
Sometimes FTA; also 3895Vt
FTA & CA
5 chs TV, FTA, some tests
FTA; Dubai Sports Ch some English, soccer-
Two Israel, two Russian (REN-TV)
New 107-06; 10 FTA here
new here Dec 2004; Euro-French music videos
Increased coverage; great variety audio chs(03-05)
Sun-TV, Surya TV, KTV (FTA)
FTA MCPC; Yemen, MBC EUROsport tests
Now loaded from 96.5E; svrl below 3900 all RHC
New 07-06; Yanbian, Jilin Satellite TV
replaces analogue same freq; V33, A32
Now SECA 2 CA (10-04); Radio Aust. Eng. A2011
English + V1160, A1120; 525, 625 versions
Was parallel to 3640Hz analogue (now gone)
Conax CA, all Hindi films
Also reported 3,333, 3/4 October 2005
SAB may no longer here here; moved to NSS-6?
new frequency October 2005
New April 2005; English, urdu
FTA SCPC; New PIDs V3601, A3606 June 2003
CA + 10 FTA; DW, TV5; Al Jazeera English
NDS CA (Pace DVS211, Zenith)
Guangxi TV; was As2
Was As2
Was As2
Was As2
Was As2; HeiLong
NDS CA (Pace DVS211, Zenith)
NDS CA (Pace DVS211, Zenith)
Shanghai
Apparently Mongolia
PowVu CA; new SR Apr 29; CNN radio FTA
NDS CA; Star News India FTA VPID 514, APID 648
NDS CA w/ 4(Chinese) FTA
New Sr September 2004
Was As2
new December 2004
Was As2
Was As2
Was As2
New July 2005
new Sr, channels, April 2006
"History Channel" - SCPC, some English
MATV Ch Movies now Irdeto 1
Hindi (+ "Plus"); day parts
moved from 4115
Now SECA 2 CA (10-04); 1 occ. FTA (varies)
Was As2
Was As2
Was As2
Was As2
NDS CA using RCA/Thomson,
Pace IRDs; 2,535 has 2 FTA. Bird now inclined.
also 3586H/17,500, 3496H/19,615
FTA SCPA; NT/NC only
change from 4055V; FTA SCPC
also try 3500H, 27,000, 3/4; strong NZ
New (but probably temporary) 07-06
FTA, may not be active full time
FTA; Sr change 01/03; erratic
bounces btwn FTA and CA; unreliable (12-04)

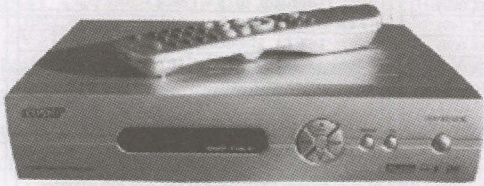
Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
	SCTV	3726/1424V	1TV	3/4	6(620)
	RCTI	3473/1677H	2	3/4	8(000)
As4/122E	CCTV MCPC	3820/1330V	8	3/4	27(500)
Jc3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(000)
	Asian bqt	3960/1190V	up to 8	7/8	30(000)
Ap6/134E	Multiple	4140/1010V	up to 8	7/8	27(500)
T18/138	Tests	3460/1690V	8	3/4	30(000)
Am3/140	STS +	3731/1419R	1	3/4	3(200)
Jc2A 154	BYU-TV	3915/1245V	1+ 20 languages	3/4	4(166)?
MeasSs2	Astro Mux	11.602H	up to 17TV	3/4	41(500)
B3/152	7 Cent. Feed	12.310H	1TV	3/4	5(100)
	AuroraBiz	12.407V	4 TV, 10 radio	2/3	30(000)
	UBI	12.425V	up to 13 TV + radio	3/4	22(500)
	Globecast 2	12.525V	13 TV, 8 radio	2/3	30(000)
	Globecast (feeds)	12.550- 555V	1TV	3/4 & 2/3	6(110/ 670)
	Globecast	12.564V/T13	2+ TV	2/3	30(000)
	UBI	12.613H/T14L	11+TV	3/4	22(500)
	UBI	12.640H/T14U	11+TV	3/4	22(500)
	Globecast 1	12.658V/T7	14TV, 15 radio	2/3	30(000)
	UBI	12.674H/T15L	11+TV	3/4	22(500)
	UBI	12.701H/T15U	11+TV	3/4	22(500)
	WA ABC	12.702V	1 TV, 1 radio	7/8	14(288)
	WA SBS	12.720V	4TV, 2 radio	5/6	12(600)
	WA GWN/WIN	12.738V	2TV	7/8	14(295)
C1/156E	Aurora	12.324V/T1U			
	Pay TV	12.365V/T2	11TV, 2 radio	3/4	27(800)
	Aurora Home	12.407V/T3	5 TV, 13 radio	2/3	30(000)
	Pay-TV	12.447V/T4	5TV, 4 data	3/4	27(800)
	Pay TV	12.487V/T5	3+ TV, data	3/4	27(800)
	Aurora 2	12.527V/T6	7TV, 20 radio	3/4	30(000)
	Pay-TV	12.567V/T7	10 TV	3/4	27(800)
	Pay-TV	12.607V/T8	10 TV	3/4	27(800)
	Pay-TV	12.647V/T9	10 TV	3/4	27(800)
	Pay-TV	12.692V/T10L	6TV, 27 radio	1/2	28(650)
	Aurora MUX	12.728V/T10U	4TV, 17 radio	1/2	24(450)
	Austar	12.305H/T11	6TV, 24 data	3/4	30(000)
	Pay-TV	12.358H/T12	10 TV	3/4	27(800)
	Pay-TV	12.398H/T13	10 TV	3/4	27(800)
	Pay-TV	12.438H/T14	6TV, 3 data	3/4	27(800)
	Pay-TV	12.478H/T15	10 TV	3/4	27(800)
	Pay-TV	12.518H/T16	10 TV	3/4	27(800)
	Pay-TV	12.558H/T17	10 TV	3/4	27(800)
	Pay TV	12.598H/T18	10 TV	3/4	27(800)
	Pay-TV	12.638H/T19	10TV, 30 radio	3/4	27(800)
	Pay TV	12.688H/T20	11TV	3/4	27(800)
D1/160E	Sky NZ test	12.394V	TV +	3/4	22(500)
	SBS SE	12.451H	TV+	5/6	12(600)
	Sky NZ	12.519V	TV+	3/4	22(500)
	Sky NZ test	12.519H	TV+	3/4	22(500)
	ABC NSW	12.514H	TV	7/8	14(294)
	ABC South	12.532H	TV	7/8	14(294)
	ABC Northern	12.550H	TV	7/8	14(294)
	ABC Western	12.577H	TV	7/8	14(294)
	ABC Victoria	12.595H	TV	7/8	14(294)
	ABC Qld	12.613H	TV	7/8	14(294)
	Southern Cross	12.744V	TV + 1 radio	3/4	5(100)
	Sky NZ Test	12.644V	TV		
18/166E	SelecTV	12.526H	8+TV	3/4	28(800)
	CCTV	12.557H	3+TV	3/4	13(240)
	ABS-CBN	12.575H	4+TV, 4+ radio	2/3	13(845)
	MYSAT	12.646H	up to 8 TV	3/4	28(066)
	JEDI/TVB	12.686H	11+ TV	3/4	28(126)
	PnGlobal Aust	12.726H	6+TV	3/4	28(066)
	ABC A-P	4180/970H	2TV, 2 radio	3/4	27(500)
	Hallmark Asia	4166/984H	1 TV	3/4	6(620)
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(125)
	Hwazen TV	4130/1020H	1 TV		
	NHK Joho	4060/1090H	7TV, 1 radio	1/2	16(180)
	FOX Mux	4040/1110V	up to 5TV	7/8	26(470)
	NET +	4121/1029V	1 TV	3/4	4(774)
	ESPN USA	4020/1130H	8+TV, data	3/4	26(470)
	Discovery	3980/1170H	8 typ	3/4	27(690)
	CalBqt/Pas8	3940/1210H	up to 3+ FTA	7/8	27(690)
	CNBS HK	3900/1250H	up to 7TV	3/4	27(500)
	FilipinoMUX	3880/1270V	up to 8TV+radio	5/6	28(694)
	CCTV Mux	3829/1321H	up to 4 + 1 radio	3/4	13(240)
	TVBS-N	3836/1314V	1FTA, 4+ CA	3/4	17(500)
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(632)
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(000)
	Discovery Asia	3764/1386V	Up to 6 TV	3/4	19(850)
	MTV	3740/1410H	8	2/3	27(500)
12/169E	WA Mux Pv	12.281V	3+ TV, radio	2/3	27(500)
	Ariang Tv	12.401V	1TV	3/4	4(400)
	ABS-CBN	12.575H	4TV, 2 radio		13(845)
	Test mux	12.715H	6+ TV	2/3	30(000)
	TARBS feeds	4090V/1060V	9TV + radio	3/4	21(000)
	BBC SCPC	3986/1164H	1TV	1/2	5(700)
	Middle East	3836/1314V	4 typ	3/4	13(331)

Receivers and Errata

was on 4048V; New Caledonia, parts of Australia
FTA SCPC, or, 3774H, 6.520, 3/4 (June 06)
8 FTA here; also try 4020V, 4060V
PowerVu; some FTA (Ch. 1 & 3)
CA & FTA NTSC: Japan, Taiwan
(ApStar 6: also 4180V same #s; some analogue also)
also try 3660/3540Vv1, Sr 30 000, 3/4; some FTA
North beam; also try 3875R, 12.475, 1/2
Strong NZ & Australia; may now be 1/2, 6.525
Aust East beam - 3 FTA + 14 CA
Was B1; moved June 2006, concerns B1 failures
differs from 12.407 C1, tune ch FTA; NZ+Au
Now Irdeto V2
NZ + Au, FTA + Mcrypt CA
occ feeds, NZ + Au; recently 12.553V
AMTV, Healing only FTA svcs now here
High performance beam; not NZ; new CA 07-06
High performance beam; not NZ; new CA 07-06
NZ + Au (Mcrypt, PowVu capable)
High performance beam; not NZ; new CA 07-06
High performance beam; not NZ; new CA 07-06
ABC WA tests, FTA
SBS, radio tests WA FTA
Irdeto V2 CA, tests (GWN, WIN)
not currently in use
Tests; SBS-NDS CA, others FTA when here
NZ (90cm) + Australia (Only C1 svc left on NZ)
Australia NA only (leakage to Norfolk, New Cal)
Australia NA only (leakage); 9-Net x 3 widescreen
Arrow radio (still here), tone FTA
Pay-per-view movies; CA
Pay-per-view movies; CA
Pay-per-view movies; CA
ABC for Foxtel/Austar; previously 12.288V
changes September 2005
Austar inter; Expo FTA
NDS CA + Mcrypt; CA
CA, subscriptions available Australia, Norfolk
Sky News active; 'Help x 2' FTA
CA, subscriptions avail Au, Nrlk; TVSN FTA
CA, subscriptions available Australia, Norfolk
"Home"CA, subscription available Australia, Nrlk
CA, subscriptions available Australia, Norfolk
CA, subscription available Australia, Norfolk
CA, subscription available Australia, Norfolk
+ 12.420V, Au + NZ beam
+12.469H/Qld, 12.487H/South,
+12.546V, 12.581V, 12.608V, 12.644V: NZ only
+12.546H: NZ only
Australia only
Australia only
Australia only
Australia only
Australia only
Australia only
Australia only
+12.671V, 12.707V, 12.734V: NZ only
& 12.286, 12.326; FTA prev. 526 V10112, A1012
FTA-Australia
CA -Australia
FTA V=5340, A=790 -Australia
June 2002-Irdeto-2 CA - Australia
Some FTA-Australia
Dateline west; also east PAS2, 3901V
Temporary FTA (January 2007)
PowVu CA

PowVu CA & FTA, sub available-changes 05-06
was PAS-2, previously 3992Vt, feeds FTA
NET25 + FTA; new PIDS April '03; reload
PowVu CA; ch 11 DCP-CCP bootstrap; audio FTA
PowVu/CA (some audio FTA)
PowVu CA & FTA (EWTN + CBS + TBN +)
NDS CA (6 channels); one test card occ FTA
Myx FTA V1960, A1920 + radio FTA
PowVu FTA, replaces PAS-2 svc
CCTV cross pole; new SR 04-06
PowVu CA
PowerVu; some audio FTA
PowerVu; Asian MUX; new parameters Nov '03
8 MTV China FTA V289, A290; rest CA
PowVu CA, WIN, ABC NT, SBS; status unknown
Test - may not stay permanently
Temp FTA, subs Aust 011-800-2270-0722
initially with 6 NTSC colour bars
Occ FTA (Chile +); BIG power reduction Nov 03
BBC World moved here January 2005
Subscriptions available; Strong Technology

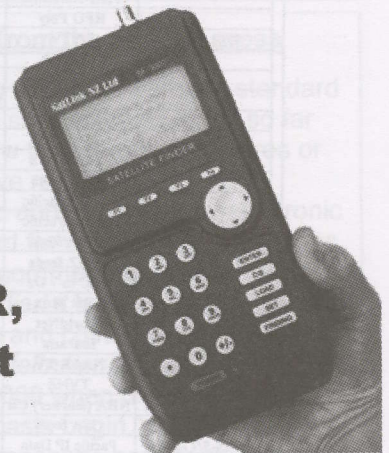
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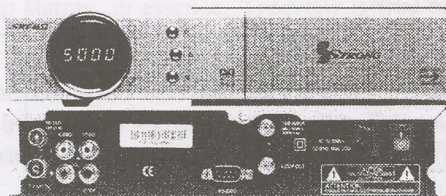
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Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS2/169E)	Adventists.tv	4040/1010H	1	2/3	5(900)
	Feeds	3868/1182H	1	2/3	6(620)
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(620)/7(498)
	Cal PowVu	3901/1249H	up to 8	3/4	30(800)
	HK bouquet	3850/1300H	up to 8	2/3	24(900)
	Korean Bqt	3771/1379H	1	3/4	6(510)
AMC23/172E	Various-tests	12.730H	up to 8	3/4	30(000)
1804/174E	iPSTAR	12.619H	1	2/3	25(220)
	Tests-NZ beam	12.646H	1	3/4	22(418)
	RFO Poly	4027/1123R	1TV	3/4	4(566)
1701/180E	TNTV	11.060&11.514V	9	3/4	30(000)
	TVRFO	11.136V, 11.174V	6+TV, 3+ radio	3/4	23(149)
	Canal+Sat	11.610H	16TV, 1 radio	3/4	30(000)
	PBS	12.648HH	16TV possible	3/4	28(066)
	TVNZ/BBC	4186/964RHC	1	3/4	5(632)
	TVNZ	4178/972RHC	1	3/4	5(632)
	AFRTS DTS	4175/975L	3 TV, 3 radio	2/3	3(680)
	TVNZ/Aptn	4170/980RHC	1	3/4	5(632)
	Fiji Sky Pacific	4095/1055LHC	6TV + future radio	3/4	16(505)
	Fiji Sky Pacific	4055/1095LHC	7TV + future radio	3/4	16(505)
	TVNZ/feeds	4052/1098RHC	1	3/4	5(632)
	TVNZ feeds	4044/1106R	1	3/4	5(632)
	NBC to 7 Oz	3960/1190R	1	7/8	6(447)
	TBN Mux	3927/1223R	4TV	2/3	11(394)
	WorldNet	3886/1264R	1TV, 37 radio	3/4	25(000)
	Ioarana	3772/1378L	1	3/4	4(566)
	NASA TV	3854/1296R	1 TV	3/4	2(000)
	TVNZ	3846/1304R	1	3/4	5(632)
	NBA (Barker) Ch	3803/1347R	1	3/4	6(111)
	USA feeds	3749/1401R	4?	?	26(400)
NSS-5/177W	Pacific IP Data	3763/1387R	none-data	3/4	27(500)
	RFO/Tempo	3920/1230R	1	3/4	2(893)
	BYU-TV	4185/965R	1TV, 20+ audio	1/2	6(525)
	Australia Temp.	12.522V	8 SCPC	7/8 & 5/6	14.294 & 12.600
	Auckland Teleport	12.612V	New Mux 01/07	5/6	28(989)
	iPSTAR Tests	12.691V	8 TV	5/6	17(600)

Receivers and Errata

New December 2003; 24/7 "Hope Chs."
 FTA (occ sport); also try 3863, Sr6 100
 FTA-typ NTSC-occ sport, live Shuttle
 PowVu CA + FTA (includes BBC-W 05-05)
 was 4148Vt, some FTA
 Korean MUX, reload 12-04; new Sr
 Testing on NZ/East Australia beam
 Tests, late May start; also 12.646H
 Testing possible data links; June 2003
 SE spot beam; was 4027LHC
 east spot; 10TV + r each, vertical pol.
 FTA 11.136 Tahitian beam, 11.174 west beam, 12/04
 1+ FTA, MediaGd "2"; + 10.975 weaker
 Testing Fiji region pay-TV (MDS) package (Oct '04)
 DMV/NTL early vers. occ feeds, typ ca
 DMV/NTL early vers., occ feeds, typ ca
 'DTS Direct to Sailors; audio previously FTA - gone
 DMV/NTL early vers. occ feeds, typically ca
 Nagravision CA (> Feb 1, 2005) New PIDS
 All now (including Fiji 1) CA; 7 Feb, 2005)
 DMV/NTL early vers., occ feeds, typ ca
 SCPC, mixed CA and FTA feeds
 CA, Leitch encoded
 January 2006-now 4 channels, new Sr
 New PIDs Dec 03 very strong NZ, Pacific
 FTA SCPC; East Hemi Beam-Tahiti
 24/7 live NASA - West Hemi bm (can be difficult!)
 SCPC, mixed CA & FTA, feeds
 NBA feeds - probably CA - new Nov 2003
 16-QAM (not MPEG-2 compatible)
 Data only but useful for dish alignment
 Wallis & Futuna Island(s) service
 Global beam - requires sizeable dish
 Aust beam: 12.522, 538,555,574,604,621,639 & 657
 NEW Sept 2006; Tuesday 8PM hobby night
 CA Tests - Taiwan TV; data coming?? (NZ beam)

MPEG-2 DVB Receivers: (Data here believed accurate; we assume no responsibility for correctness!)

AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. AV-COMM P/L, 61-2-9939-4377.
 AV-COMM Tiny Tot. FTA, 12Vdc operated, palm sized, low power consumption; review SF#120. Contact # above.
 Coship 3188C. Review SF#107. Blind search FTA rcvr; works well. Phoenix Technology Group (www.phoenixsatellite.com.au) (Irdeto 2 as well as FTA versions)
 Coship FTA, CA, HDD. Review SF#143, state of art functions, blind search. Phoenix (above), Satlink NZ, fax 64-9-814-9447;
 Divitone: "Left-handed" review SF#115; does "code key" entry. Available <http://www.satmax.ws>
 eMTech eM-100B (FTA), eM-200B (FTA + Ctx2), eM210B (FTA + 2xCI + positioner); KanSat 61-7-5484 6246 (review SF#89)
 eM-150/Homcast. FTA + embedded multi-format, review SF#144. Sciteq (61-8-9409-6677) and Kristal (61-7-4728 7704)
 Fortec Star Lifetime. Two versions, both blind search, code-key programmable, one X 2 CI. Review SF#119. www.aDigitalLife.com
 Homcast (em-150, eM-1150, eM-2150) series of FTA, CA, HDD state of art STBs, review SF#144. Sciteq (www.sciteq.com.au)
 Humax ICR1 5400 (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76.
 Humax ICR1 5410 (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq (www.sciteq.com.au).
 Hyundai-TV/COM. HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good.
 Hyundai HSS700. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.
 Hyundai HSS800CI. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.
 INNOVIA IDS3088. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix TechnologyGroup, and Satmax (<http://www.satmax.ws>).
 ID Digital CI-24 Sensor. New August 2003; new lower noise tuner, extra sensitivity; CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.
 KSF-570 FTA digital receiver, import; KSC-570 adds CI x 2 (no test or user results available). Asoft Limited, 64-4-234-1096
 KSC-N550H2 'Premium Dual DVR' digital receiver (no test or user results available). Asoft Limited, 64 4 234 1096
 MediaStar D7.5. New (May 00) single chip FTA; review June 2000 SF. MediaStar Comm. Int. 61-2-9618-5777 (www.mediastar.com.au)
 MediaStar D10. FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.
 MultiChoice (UEC) 660. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738
 Nokia "d-box" (V1.7X). European, FTA, may only be German language, capable of Dr. Overflow software. SF#95, p. 14.
 Nokia 9200/9500. When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 (www.satworld.com.au)
 Pace DGT400/DVR500. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818). UECs replaced.
 Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).
 Phoenix 111, 222, 333 models (no longer produced): Service, backup - Phoenix Technology Group 61 3 9553 3399; www.phoenixsatellite.com.au
 Pioneer TS4. Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)
 PowerVu (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, CMT etc). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).
 PowTek. Blind Search Chinese sourced, field tests rate it highly. Source jason@aDigitalLife.com
 Prosat 2102S. FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.
 SatCruiser DSR-101. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-2749); no longer available.
 SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.
 SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at tim@dmsiusa.com.
 SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above).
 Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superceded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin
 Strong Technologies SRT2620. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below).
 Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.
 Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, does code-key with additional software, Aurora. Strong Technologies 61-3-8795-7990.
 Strong 4800 II. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.
 Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.
 UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361 3636.
 UEC642. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faulty P/S. Norsat 61-8-9451-8300.
 UEC660. Upgraded UEC642, used by Sky Racing Aust., Foxtel, limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.
 UEC700/720. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers; propensity to fall off back of trucks.
 "X" Digital. When modified with "aftermarket" Internet software, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies (61-3-8795-7990).
Accessories:
 Aurora smart cards. MCRYPT (Irdeto V2) cards now available (Jan 2005), Sciteq 61-8-9409-6677.
 PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)
 PowerVu (Pacific) repair service: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email darius@cases.net.au)

WITH THE OBSERVERS

AT PRESS DEADLINE

Reminder (see page 2); there will be **NO ISSUE** of SatFACTS dated May 15th; next issue will be enlarged two-month coverage dated June 15.

AsiaSat 3S/105.5E: "PTV Global has replaced Indus Plus on 4112V, FTA." (Ken)

Intelsat 701/180E: "TNTV is now on 10.958RHC, has left the TNS bouquet." (GW, Tahiti)

Optus B1/ 164E: This old, tired satellite has been drifted to this location; future unknown but not significant!

Optus B3/ 152E: "Globecast: T5/12.525V, Sr 30.000, 2/3 Hungarian 'Funa' remains FTA (V=2665, A=22625). T13/12563H has added 'INI' for Baptist oriented 'Inspiration TV' from USA; V=2060, A=2020; also appears on T7/12.657V (V=505, A=580). Also T7 has added a new radio channel (A=1826), 'TSR', probably Armenian, although Globecast mis-labelled it as 01 (TV channel) rather than 02 (radio channel). Fox Sports feeds, such as 12.400H, Sr 6.670, 3/4 using SA encryption are now often CA - have been FTA. ABC is also in the habit of varying the PID numbers (12.319, 12.328, 12.337H; all Sr 6.980, 3/4) when they are creating sport feeds - try V=4194, A=4195 until they read this here and change them again!" (IF, Qld)

Optus C1/ 156E: "Al Jazeera English continues FTA (T2/12.367V, Sr 27.800, 3/4), V=1121, A=1122; strange this one. T128/12.598H, Sr 27.800, 3/4 channel labelled 'spare' since Fox Footy went away is now 'TACT Footy (V=1081, A=1082) and 3 data PIDs; often same content as 'Fox Sports 1'. (IF, Qld.)

Optus D1/ 160E: "As forecast, DW, CCTV9, Bloomberg have been dropped from Freeview MUX as it prepares for May 2nd launch. CCTV continues on Sky NZ MUX, and it pays Sky to be there!" (BM)

Soapbox: "Auckland's terrestrial Ku-band signals are all 36 MHz bandwidth." (Tony Dunnett) "TVNZ plans TVNZ3 as a family oriented channel as early as September, and addition of a 24 hour news channel early in 2008 - probably to coincide with the launch of terrestrial digital in the first quarter." (Brian) "Sky is holding back promotion of their MySky because MySky 2 is scheduled to be available in June-July. The difference is "2" will do HD, which Sky was planning to do originally through D2 to co-fly at 156E but now that has been put off until D3 flies in 2009 or so ... well, the plot thickens!" (Stephen) "Prime has been testing two extra feeds through Sky - are they going into regional advertising to compete with TVNZ which for the moment apparently cannot offer regional on satellite?" (William T.) "I read a report on the state of war between Sky and Freeview and noted a Sky chap stating, in essence, 'Freeview is free to air so we (SKY)

Freeview quotes from the general press

"Freeview programming will be delivered in standard definition and the two set-top boxes it has so far accredited will not allow for interactive features or hard drive recording."

"The set-top boxes, sold and supported by electronic retailers, cannot be used for sending text messages and email or e-commerce services."

(TVNZ source) "We studied it long and hard. It was a trade-off between usage and cost. You add cost if you add a modem. A high-definition set-top box will be available by March 2008 when digital terrestrial broadcasts begin."

(Coop's note: A strong message here that HD will be initially limited to terrestrial delivered Freeview.)

(TVNZ source) "We think we will have a personal video recorder for the satellite platform by April 2008."

(Coop's note: Let's see here - the terrestrial viewers get HD and the satellite viewers have an optional PVR version. Nice trade!)

"Satellite has a bad name in New Zealand because of the end of life problems with the original B1, which after 15 years was literally falling out of the sky. Freeview has to restore public confidence in satellite as a delivery medium if they are to succeed."

(Freeview source) "We do not intend to certify dishes or accredit installers."

(Coop's note: That does not explain the letter from Mia Lloyd of Freeview on page 4, here, this month)

"(Government Minister) Steve Maharey's June (2006) estimate that Freeview dishes will cost \$150 - \$200, installed, missed the mark by about half; \$400 is a more realistic number."

(Coop's note: Only if someone cuts the price on Zinwell and Hills Freeview STBs which will retail-list for \$299 - kind of hard to provide a dish, LNBf, cabling and installation for \$101! On the other hand, if the latest Coship's at a dealer cost under NZ\$70 work as promised - well, maybe \$200 is not so far off after all.) (Freeview spokesman) "It will be technically possible for someone to access Freeview using a Sky satellite dish, but the legalities are between Sky TV and the individual householder."

(Coop's note: Smooth move - shift the legal burden to the viewer!)

WITH THE OBSERVERS: Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. **Photos of yourself, your equipment** or off-air photos taken from your TV screen **are welcomed**. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady.

Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for May-June 15th issue: June 4th by mail or 5PM NZT June 5th if by fax to 64-9-406-1083 or Email skyking@clear.net.nz.

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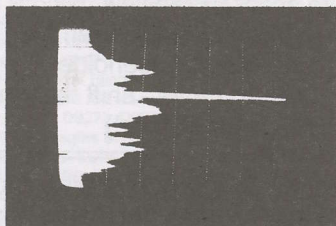
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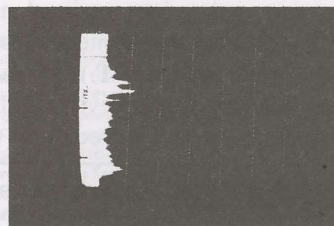
Email - cgarry@avcomm.com.au

Since late 2004 broadband interference in the C-band satellite spectrum has been ever present in the Sydney metropolitan area wiping out an estimated 10,000 C-band viewers as well as many commercial sites. This interference caused by Unwired Australia has now spread to Melbourne. To fight this interference, Av-Comm has designed a range of products to allow customers to continue using C-band systems.

- IF Filter 950-1450Mhz
- Dual Polarity 3.7 - 4.2Ghz LNB with 3.5Ghz Notch Filter
- Single Polarity PLL 3.7 - 4.2Ghz with 3.5Ghz Notch Filter
- Waveguide Filter 3.7 - 4.2Ghz



Spectrum Showing Unwired



Spectrum After Filtering

As each site that suffers interference is different, there is no one fix for all affected sites but over the past two years we have developed many combinations to give you the best chance of beating this problem. Our commercial solutions have a 100% success rate. If you are experiencing problems caused by interference feel free to call us and we will help find the best solution for you.

BRIEF Excerpts from "C-BAND Remembered"

"Ted Turner's Russian Belt Buckle " (Mike Kohl):

"Immediately after entering the building, we both could not avoid the sight of a well dressed gentleman pacing the floor in front of the deli counter. As I recall, this person spent just over \$250 on deli items, wine and other refreshments. It took a while for the lady behind the counter to finish selecting and weighing the deli items, and the man seemed rather impatient. We were absolutely fascinated watching this interaction, and it seemed he was a person used to giving orders, but had to inquire virtually every minute or less on whether the order was ready. While this was happening, John noticed something on the man's waist. Absent the dried blood, it was a Russian Army belt buckle, identical to the one he had shown to me the previous evening. He could not resist drawing the mystery man into conversation, and baited him by turning to me in a loud voice and saying, 'Mike - it is not often that you see a Russian Army belt buckle in these parts!' I agreed and the man promptly turned and walked to us asking John how he knew about Russian Army belt buckles. John's non-chalant answer was, 'I have one just like it.'

The next question was to John: 'Where did you get it?' which John answered with a single word; 'Afghanistan'. The gentleman again: 'What were you doing there?' John saw no need to be specific that he had actually been working in the next country east so he answered that he had been installing satellite antennas. A warm glow spread over the man's face. 'Satellite antennas! I'm in the satellite business, my name is Ted Turner. "

"Reflections on my first REAL TVRO antenna" (Jim Vines):

"Under a clear Oklahoma sky with temperatures near the 100F mark, I proofed the parabolic framework on my first-ever Paraframe, Inc. TVRO antenna, a 3.66m unit that I had dubbed the ET3.66.

By twilight I had secured the aluminum panels to the parabolic framework. Earthstar's Bob Christofanelli ran the RG-213 line to Andy Hatfield's AVCOM PSR3 prototype receiver. Of the 500+ in attendance, not one had more than a fleeting understanding of what satellite was or how it worked when they arrived. Four days later, each would have graduated the SPTS as a 'true pioneer' and a walking textbook for all of the 'secret' insider passwords - such as LNA!"

"The untimely death of ICON Shaun Kenny" (Joe Fiero):

"During the early days of Boresight, Shaun was in a rented building located in the myriad of industrial parks along the interstate in Piscataway, NJ. While functional, he never liked the surroundings very much. A constant flow of truck traffic was both annoying for the layers of diesel exhaust left behind as well as disruptive to the TV programming recording sessions which required multiple takes to work in between exhaust system noises. One day Shaun came across this rustic building in Whitehouse Station, NJ. It was about half the distance from his new home as compared to the Piscataway location. It was also an old dairy barn, NJ style. No red clapboard, but walls made of massive stone unearthed over the centuries during the conversion from the original forest to farmland. Quite rustic and certainly not the place you would expect would become the nerve center of the great telecommunications revolution of which we all were a part."

"Original 'Pioneering' is NOT dead!" (Mike Kohl):

"I had originally requested, for testing, a pair of 12 foot mesh C-band antennas be made available; Russian built would be fine since I was in their country! When I finally arrived, what I found was one 12 foot and one 8 foot, both built in Taiwan and neither had been shipped (or perhaps it had been lost) with hardware. Hand fabricating 3" U clamps at 40 degrees below zero F was about to become a very long, very painful, frost bite experience. When it was finally assembled, the heavy winds and throat deep snow made placing either antenna onto a piece of pipe (or anything near vertical) virtually impossible. This was turning into a pitch-black nightmare above the Arctic Circle in December!"

C-BAND REMEMBERED

As told by the original pioneers:
Available in the Pacific and Asia
late May 2007 - order page 32.

TELEVISION'S PIRATES and C-BAND REMEMBERED

SORRY - SPECIAL PRICES EXPIRED APRIL 7th!

TELEVISION'S PIRATES: Hiding behind your picture tube. The definitive, only, narrative of HOW home TVRO was born, who the pioneers were, what they did and why C-Band TVRO died in the USA. 924 pages, a massive read!

C-BAND REMEMBERED. In their own words, dozens of pioneers who made their own contributions to the development of home TVRO - this book is being first-introduced at SBE2007 in Atlanta, Georgia April 19th.

TELEVISION'S PIRATES - US\$29.00/Australia \$37.00 plus airmail postage, NZ\$41.00 including postage.

C-BAND REMEMBERED - US\$20.00/Australia \$30.00 plus airmail postage, NZ\$34.00 including postage.

*"**Television's Pirates** is the best book I have ever read - and the longest! I was so excited by what I learned that I am ordering the full set of CATJ + CSD DVDs and the 'TVRO Fifth Birthday' two-hour HBO television program. Superbly done and NOW I understand why pay-TV is the way it is! What a bunch of thieves." DL, Rochester, New York*

Ordering:

- ☐ **TELEVISION'S PIRATES;** US\$29/A\$37 (plus postage) and inside NZ, \$41 postage paid.
- ☐ **C-BAND REMEMBERED;** \$US20/A\$30 (plus postage) and inside NZ, \$34 postage paid.
- ☐ **SatFACTS SUBSCRIPTION** - for 12 months. US\$75, A\$96, NZ\$70 airmail.
- ☐ **SatFACTS Anthology** - Volume 1, # 1 through issue # 144 (August 2006); DVDs (2), Acrobat Reader required (version 5.0 or better); US\$40/A\$50/NZ\$50 fast post (inclusive)
- ☐ **CSD + CATJ Anthology** - Two DVD set covering 1974 - 1987; most complete set of month by month development of home TVRO (and cable TV) available anyplace in the world. US\$/NZ\$/A\$25 including postage.
- ☐ **The Shaun Kenny Memorial Collection:** More than 30 hours on DVD of **Boresight** and its cousins from the mind of Shaun Kenny: US\$75/A\$95/NZ\$108 fast post (inclusive).

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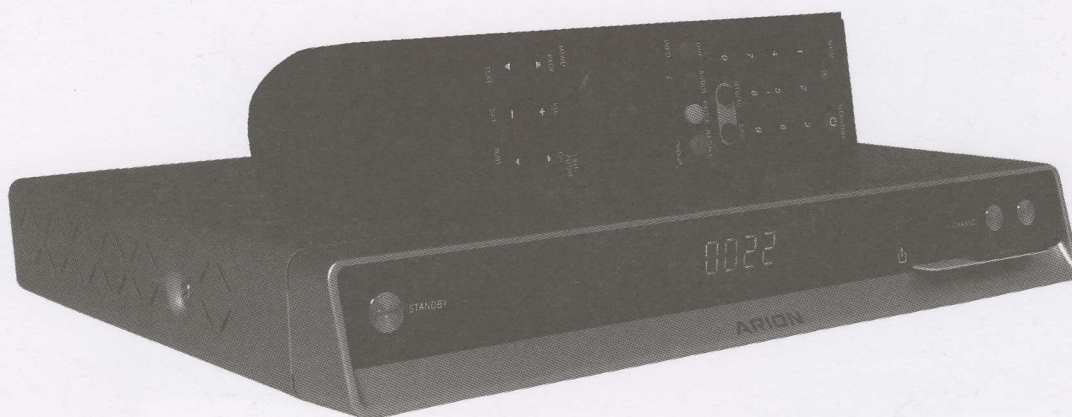
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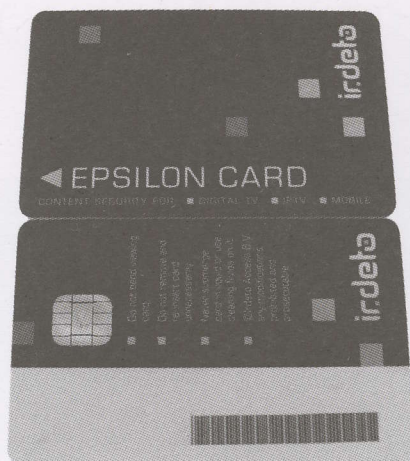


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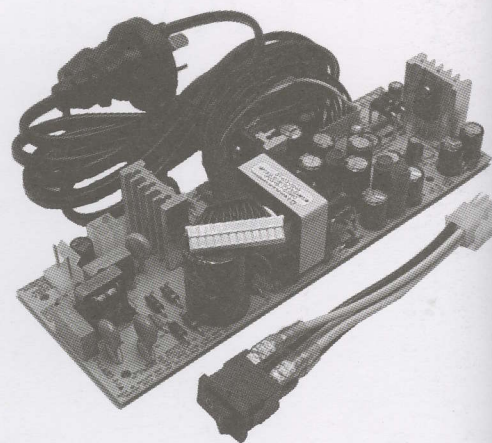
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